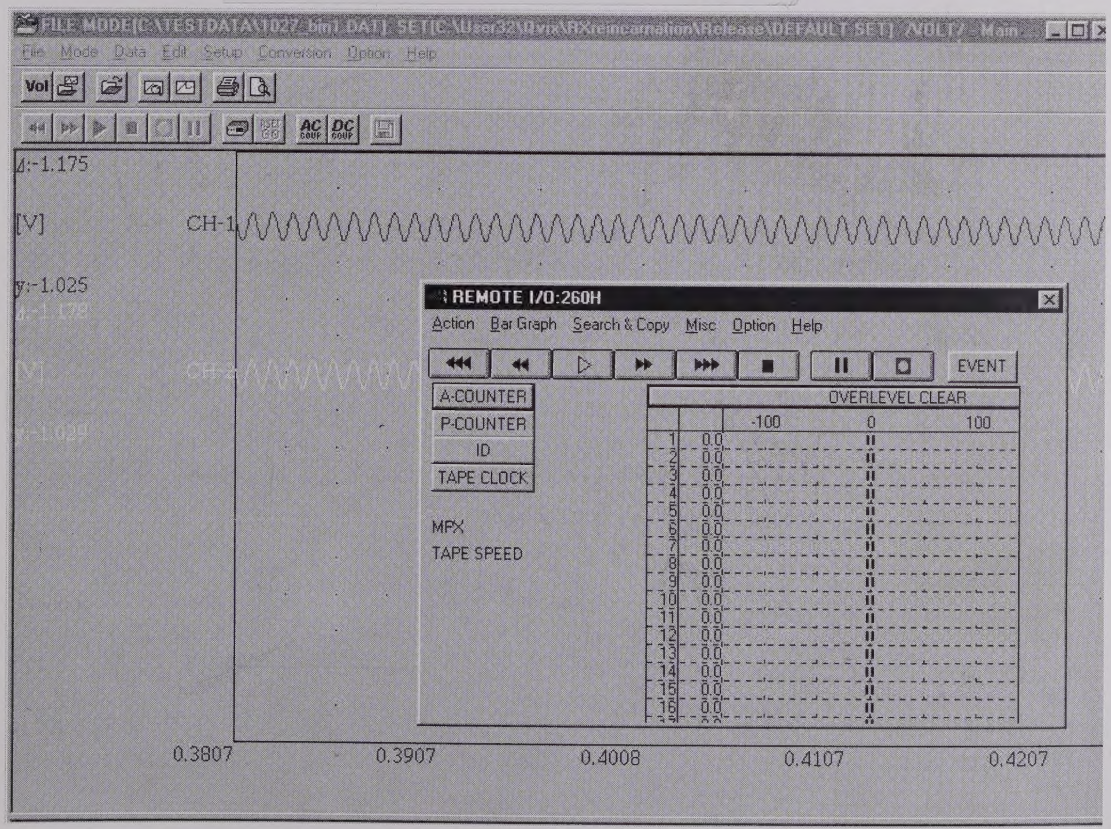
TEAC®

# QuikVu-RX/Win

VERSION 2.0.0J

## User's Manual

FOR WINDOWS 95, 98, 2000,& NT4.0



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# TABLE OF CONTENTS


## 1. QUIKVU-RX/WINDOWS START WINDOW 6

**1.1 QuikVu-RX/Windows start window functions** 6
1.1.1 TitleBar 7
1.1.2 MenuBar 7
1.1.3 ToolBar 9
1.1.4 Raw graph area 11
1.1.5 Analysis graph area 12
1.1.6 Splitter 12
1.1.7 StatusBar 12
1.1.8 Popup Menu 13

**1.2 QuikVu-RX/Windows start window graphic functions** 14
1.2.1 Raw graph area functions 14
1.2.2 Analysis graph area functions 15

**1.3 QuikVu-RX/Windows remote contrtol functions** 16
1.3.1 TitleBar 17
1.3.2 MenuBar 17
1.3.3 RX data-recorder status indicator and search function buttons. 18
1.3.4 Bar meter 18

## 2. VIEW WINDOW 19

**2.1 File** 19
2.1.1 Remote 19
2.1.2 Print 19
2.1.3 Print preview 20
2.1.4 Print setup 22
2.1.5 Print margin 22
2.1.6 New SET File 22
2.1.7 Load SET File 23
2.1.8 Save SET File 23
2.1.9 Save SET File As 24
2.1.11 Exit 25

**2.2 Mode** 25
2.2.1 FileMode 25
2.2.2 ScopeMode 25

**2.3 Data** 26
2.3.1 OpenFile 26
2.3.2 View Current Header 27
2.3.3 Refile 28
2.3.3.1 Data Copy Setup dialog 29
2.3.4 Data Copy Setup for SCOPE mode 29

**2.4 Edit** 31
2.4.1 Copy 31

2.4.2 Clipboard setting 32

**2.5 Setup 32**
2.5.1 PlotPanel 32
2.5.1.1 PlotPanel 32
2.5.1.2 Channel setup 34
2.5.2 ScopeSetting 35
2.5.2.1 Scope setup 35
2.5.4 Analysis 36
2.5.4.1 Spectrum 36
2.5.4.2 Autocorrelation and Crosscorrelation 37
2.5.4.3 Filtration 38
2.5.4.4 1st derivatives, 2nd derivatives and Integrals 38
2.5.4.5 Calculate by Equation 39

**2.6 Conversion 39**

**2.7 Option 40**
2.7.1 Configure 40
2.7.1.1 Buffer size setup 41
2.7.2 Environment 42
2.7.3 Font 44

**2.8 Help 44**
2.8.1 Using Help 44
2.8.2 Help Finder 44
2.8.3 About 44

## 3. REMOTE CONTROL DIALOG 45

**3.1 Action 45**
3.1.1 Exit 45

**3.2 BarGraph 45**

**3.3 Search 45**
3.3.1 ID search 45
3.3.2 ID+P-counter 47
3.3.3 A-counter 49
3.3.4 Clock search 50
3.3.5 END mark 50
3.3.6 Shuttle 50
3.3.7 Data Copy Script 51

**3.4 Misc 54**
3.4.1 Auto Event 54
3.4.2 Trigger REC 55
3.4.3 Interval REC 56
3.4.4 View log 57

**3.5 Option 57**
3.5.1 Configure 57
3.5.2 About 57

## 4. SETUP QUIKVU-RX/WINDOWS 58

**4.1 Installation procedure** 58

**4.2 Files needed for QuikVu-RX/Windows** 63

**4.4 Installation for Windows NT** 65

**4.5 QuikVu ISA Interface Board** 66
4.5.1 The DIP switch settings 66
4.5.2 Installing Board 69

## 5. ANALYSIS LOGIC 70

**5.1 Integrals** 70

**5.2 1st Derivatives** 70

**5.3 2nd Derivatives** 70

**5.4 Filtration** 70
5.4.1 Low Pass Filter 71
5.4.2 High Pass Filter 71
5.4.3 Band Pass Filter 71
5.4.4 Band Reject Filter 71

**5.5 Auto/Cross correlation** 71

**5.6 Phase correction** 72

## 6. DATA FILE FORMAT 73

**6.1 QuikVu format** 73

# FIGURES


Figure 1-1 Start window functions 6
Figure 1-4 ToolBar during plot in SCOPE mode 9
Figure 1-5 ToolBar in FILE mode 10
Figure 1-6 Popup Menu in Raw Graph Area 13
Figure 1-7 PopupMenu in Analysis Graph Area 13
Figure 1-8 Start window graph functions 14
Figure 1-9 Remote control dialog 16
Figure 2-1 Print dialog 19
Figure 2-2 Print preview for Raw graph 20
Figure 2-3 Print preview for Analysis graph 21
Figure 2-4 Print setup dialog 22
Figure 2-5 Print margin dialog 22
Figure 2-6 Load SET file dialog 23
Figure 2-7 Save SET file dialog 24
Figure 2-9 Confirmation to save last configuration 25
Figure 2-11 Load and view data file dialog 26
Figure 2-12 View header 27
Figure 2-13 Re-file dialog 28
Figure 2-14 Data Copy Setup dialog for Refile 29
Figure 2-15 Data Copy Setup dialog 31
Figure 2-16 Clipboard setup dialog 32
Figure 2-17 Plot panel setup dialog 33
Figure 2-18 Channel setup dialog 34
Figure 2-19 Scope setup dialog 35
Figure 2-21 Spectrum setup dialog 36
Figure 2-22 Analysis channel select dialog 37
Figure 2-23 Filtration setup dialog 38
Figure 2-24 Calculate by Equation setup dialog 39
Figure 2-25 Config setup dialog 40
Figure 2-26 Buffer size setup dialog 41
Figure 2-27 Environment setup dialog 42
Figure 2-28 Font setup dialog 44
Figure 3-1 ID search setup dialog 46
Figure 3-2 Copy setup dialog in REMOTE 47
Figure 3-3 ID+P counter search setup dialog 48
Figure 3-4 A counter search setup dialog 49
Figure 3-5 Clock search setup dialog 50
Figure 3-6 END mark search dialog 50
Figure 3-7 Shuttle search setup dialog 51
Figure 3-8 Data Copy Script setup dialog 53
Figure 3-9 Data Copy Setup for Data Copy Script 53
Figure 3-10 Auto event recording setup dialog 54
Figure 3-11 Auto event recording 'in progress' dialog 54
Figure 3-13 Trigger setup dialog 54
Figure 3-14 Trigger recording setup dialog 55
Figure 3-15 Trigger recording 'in progress' dialog 55
Figure 3-16 Interval recording setup dialog 56
Figure 3-17 Interval recording 'in progress' dialog 56
Figure 3-18 Misc recording log 57
Figure 4-1 Setup and initializing dialog 58
Figure 4-2 Welcome dialog 58
Figure 4-3 User Information dialog 59
Figure 4-4 Choose Destination Location 60
Figure 4-5 Select Program Folder 60

**Figure 4-6 Start Copying Files** 61
**Figure 4-7 Installing software** 62
**Figure 4-8 Setup Complete dialog** 63
**Figure 4-9 QuikVu-RX/Windows Group Folder** 63
**Figure 4-10 Kernel-mode driver installer** 65
**Figure 4-11 Kernel-mode driver installed** 66
**Figure 4-12 QuikVu-RX Interface Board** 66
**Figure 4-13 Dip switch setting** 67
**Figure 4-14 I/O base address DIP switch setting** 68
**Figure 4-15 Memory Map address DIP switch setting** 68
**Figure 4-16 IRQ channel DIP switch setting** 68
**Figure 6-14 New QuikVu Data Format** 73

# 1. QuikVu-RX/Windows start window

QuikVu-RX/Windows starts from VIEW window and contains TitleBar, MenuBar, ToolBar, Raw data graph area, Analysis graph area, a splitter and StatusBar. (See Fig.1-1)

## 1.1 QuikVu-RX/Windows start window functions

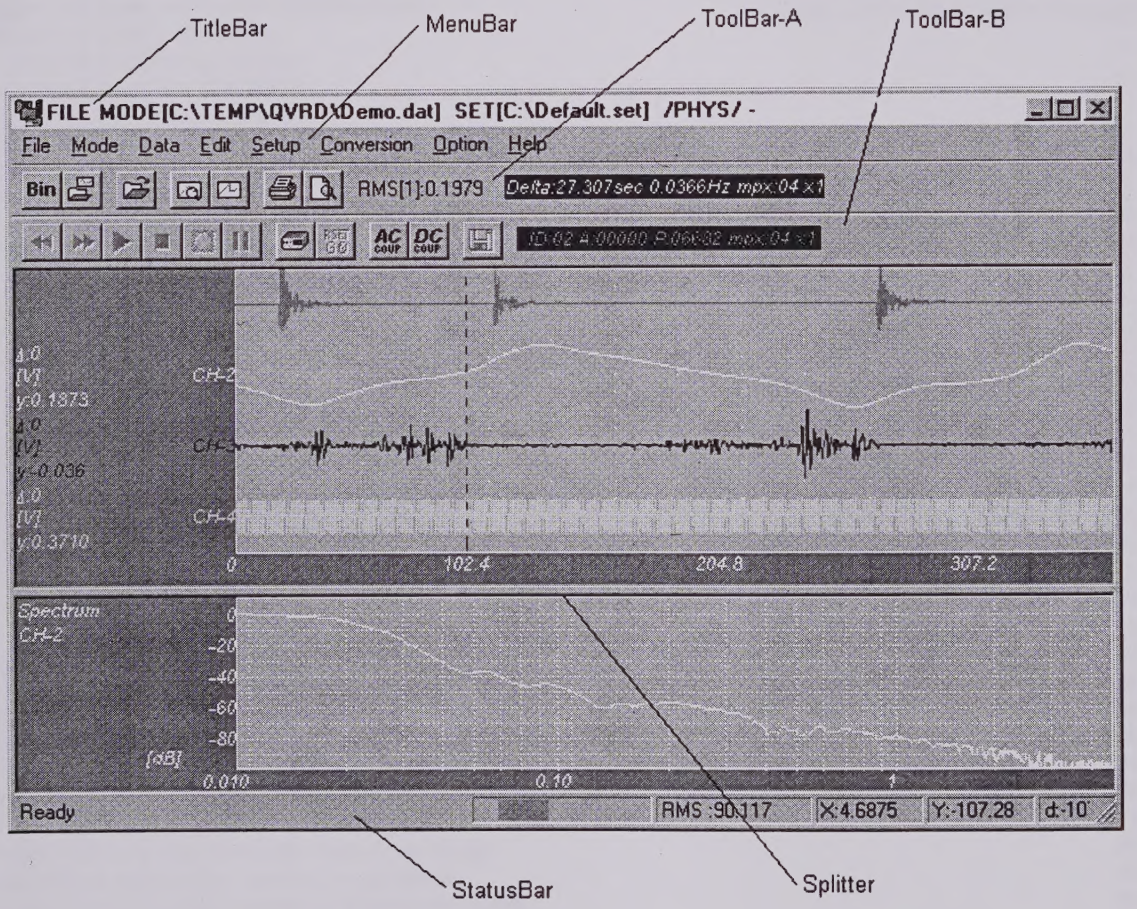


**Figure 1-1 Start window functions**

### 1.1.1 TitleBar

TitleBar displays the following information:

(1) Application name

Displays 'QuikVu-RX/Win32'.

(2) Mode name

QuikVu-RX/Windows has 2 VIEW modes of data source, you can select from the following:

a. FILE mode
Displays data file.
b. SCOPE mode
Displays data from RX data-recorder in oscilloscope image in real time.

(3) SET file name
Displays current SET file (configuration file) name.

(4) I/O base address

Displays I/O base address selected. It is not applicable for FILE mode.

(5) File name

Diplays file name displayed. It is applicable only for FILE mode.

### 1.1.2 MenuBar

MenuBar lets you go to the functions you want. The menu has the following functions.
The following is general instructions, for details see Chapter 2, VIEW window.

(1) File

| | |
|---|---|
| Remote : | Pop up remote control dialog box. |
| Print : | Print out displayed graph. |
| Print Preview : | Preview displayed graph. |
| Print Setup : | Setup printer. |
| Print Margin : | Setup margin for print out. |
| New SET File : | Change current configuration to the default. |
| Load SET File : | Open File-dialogbox and load selected SET file. |
| Save SET File : | Save SET file. |
| Save SET File As : | Open File-dialogbox and save input file name. |
| Exit : | Exit application. |

(2) Mode

FileMode : Change VIEW mode to FILE mode.
ScopeMode : Change VIEW mode to SCOPE mode.

(3) Data

OpenFile : Select and load data file.
View Header : Displays the header information of current loaded file.
Refile : Re-create data file from QuikVu file already loaded.
Data Copy Setup : Setup for data copy.

(4) Edit

Copy : Create ASCII data and attach to Clipboard from displayed and defined data by cursor. You can paste them into EXCEL. This data conversion depends on which Unit-mode is selected.
Clipboard setting : Setup parameters to edit Copy data.

(5) Setup

PlotPanel : Setup for raw data graph display.
ScopeSetting : Setup for SCOPE mode.
Analysis : Select and setup analysis window.
- Spectrum : Select and setup for spectrum.
- Autocorrelation : Select and setup for autocorrelation.
- Correlation : Select and setup for correlation.
- Filtration : Select and setup for filtration.
- 1st Derivative : Select and setup for 1st derivative.
- 2nd Derivative : Select and setup for 2nd derivative.
- Integration : Select and setup for integration.
- Calculate by Equation : Select and setup for calculation by equation.
- No analysis : No analysis is selected.

(6) Conversion

Binary : Display Binary data value.
Voltage : Display Voltage-converted value.
EU Value : Display EU-converted value.

(7) Option

Configure : Setup I/O base address.
Environment : Setup application appearance.
Font : Setup application font.

(8) Help

Index : Popup help menu and show index.
Using Help : Popup help and show 'Using Help'.
About : Popup About icon.

### 1.1.3 ToolBar

There are 2 ToolBars; ToolBar-A has Unit-mode, View-mode, File-open, Zoom-up/down, Print/Print-preview, Meter for raw-data and Time between cursors. And ToolBar-B has R-DAT operation, Auto/Reset gain-zero, Scale-up/down, Data-copy and R-DAT status indicator.
They appear/disappear in order to VIEW mode or operation. (See Fig.1-2,1-3, 1-4, 1-5)

(1) SCOPE mode

In SCOPE mode, you can operate the R-DAT data-recorder. Also Auto/Reset gain-zero, Time scale up/down and Data-copy functions are operational during data plot in this mode.

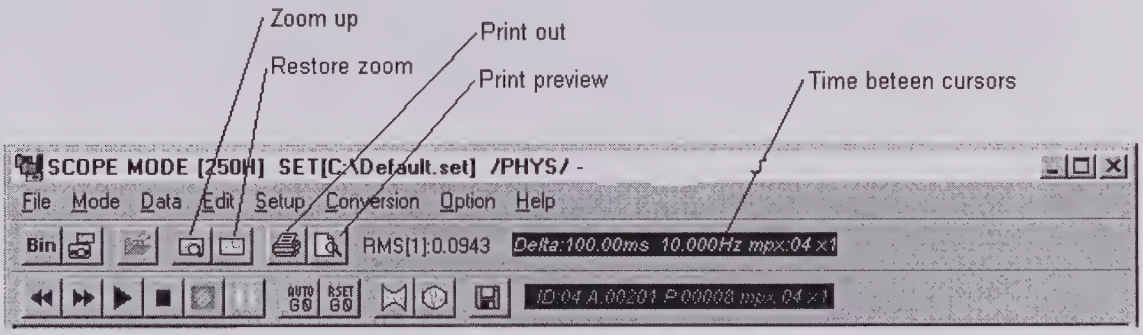


**Figure 1-2 ToolBar during plot in SCOPE mode**

(2) FILE mode

In FILE mode, a QuikVu Format data file can be loaded to the program for the display and analysis. Data recorder control does not function in this mode.

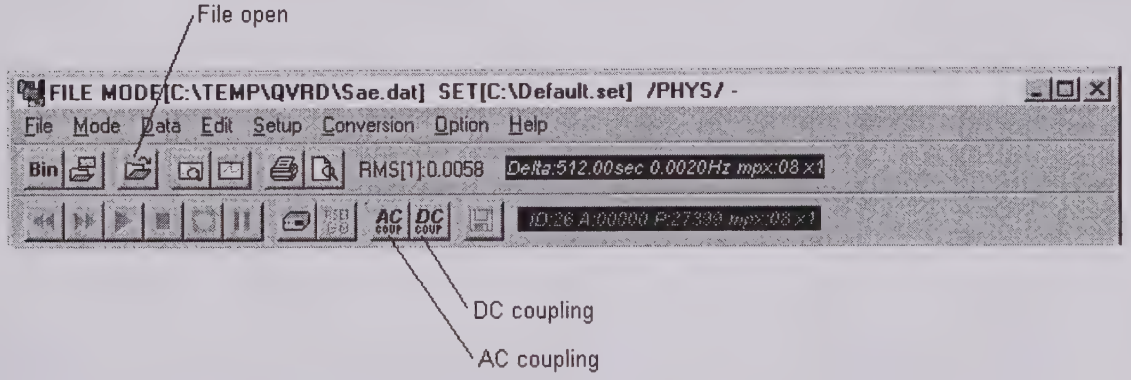


**Figure 1-3 ToolBar in FILE mode**

(3) Button functions

a. Unit-display button

It changes Unit-display (Binary, Voltage and EU conversion) then changes unit name and calculated value.

b. View-mode button

It changes View-mode ( SCOPE and FILE).
If data was being displayed, this change clears the data.

c. Zooming buttons

Only when QuikVu has data in the memory (after taking data in SCOPE mode, or loading data in FILE mode.), you can zoom-up or restore the graph. See Fig.1-5.
After zooming-up, you can scroll the graph by using 'Zooming area indicator'.

Zoom-up : Zoom-up raw data graph defined by cursors.
Restore zoom : Restore raw data graph.

d. R-DAT operation

These functions operate R-DAT and display tape transport status. In FILE mode this function is not available. When available, QuikVu displays the data-recorder status.

e. Auto gain-zero buttons

Auto gain-zero calculates average and maximum value of the data then applies shift and gain to the displayed graph. In SCOPE mode, this function is available during data plot.

Auto gain-zero : calculate appropriate gain and shift from previous data, and re-plot.
Reset gain-zero : Reset gain as 1 and shift as 0, and re-plot data.

f. Time scale buttons

The time-scale can be changed in SCOPE mode during data plot.

Enlarge time scale : Enlarge time scale.
Shrink time scale : Shrink time scale.

g. AC, DC couple buttons

Pops up dialogbox and displays AC, DC meter values. The data calculated is defined by the cursors.
This function is operational after data is plotted and displayed.

h. Printing buttons

Print out Raw or Analysis graph. Which graph will be printed out is defined by which area is focused.
To select graph, please click the graph area where you want print out.

Print : Print out graph.
Preview print : Preview graph.

i. Other buttons

Remote control : Popup remote control dialog. Not operational during data plot.
Data copy : Start data copy and create data file, and restart to plot after data copy.
It is available only during data plot.

(5) RX data-recorder status indicator (Red and black background)

It displays ID, A counter, P counter, MPX and tape speed. It is available during RX data-recorder operation.

(6) Time width indicator (Yellow and black background)

When you press left mouse button with cursor on raw graph area, cursor comes up and time width changes in response to cursor position.
When the plot stops or the data file is loaded, it displays entire data width.

(7) Meter in Raw-graph

Meter displays average, RMS, minimum and maximum value for selected channel. This result comes from the data defined by cursors.

### 1.1.4 Raw graph area

See 1.2.1 'Raw graph area functions'.

### 1.1.5 Analysis graph area

See 1.2.2 'Analysis graph area functions'

### 1.1.6 Splitter

Splitter separetes VIEW windows as raw and analysis area, and you can change their size by moving splitter.

### 1.1.7 StatusBar

StatusBar has the following functions.

(1) Application status and instruction help

Left cursor of StatusBar displays application status and instruction help. When any command is activated (To activate Menu, push button on ToolBar without releasing.) the instruction appears here.

(2) Zoomed area indicator

This indicator displays which area of the data file was zoomed up.
If 'Graph scroll' in [Option][Environment] dialog, was selected, move the magenta cursor with the mouse to scroll the displayed data in real time; In File mode, if the data file is larger than 3.8MB, scroll is displayed only when mouse button is released. However in FILE mode and the source data was big, it displays only when mouse button was released.

(3) Meter for Analysis

Meter displays average, RMS, minimum and maximum value for selected channel. This result comes from displayed data.

(4) Analysis data

The three small windows on the right cursor display X and Y axis value. The X axis is determined from the intersection of the dashed cursor with the analysis graph. The Y axis is determined from the solid cursor with the analysis graph.

### 1.1.8 Popup Menu

In each graph area, to click right mouse button pops up Popup Menu to select command for displayed data easily. If no data is loaded, it will not pop-up. (See Fig.1-6, 7)

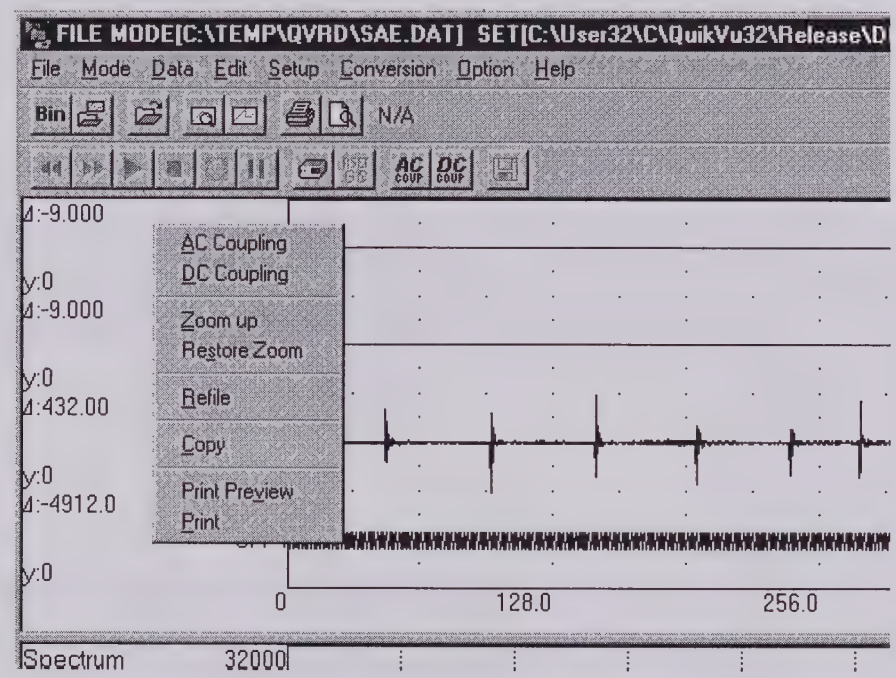


**Figure 1-4 Popup Menu in Raw Graph Area**

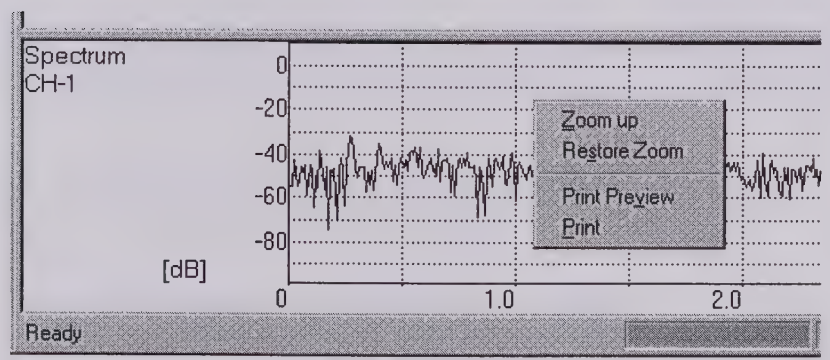


**Figure 1-5 PopupMenu in Analysis Graph Area**

## 1.2 QuikVu-RX/Windows start window graphic functions

QuikVu-RX/Windows displays data during data transfer in SCOPE mode, and entire data file as loaded in File mode. (See Fig.1-8)

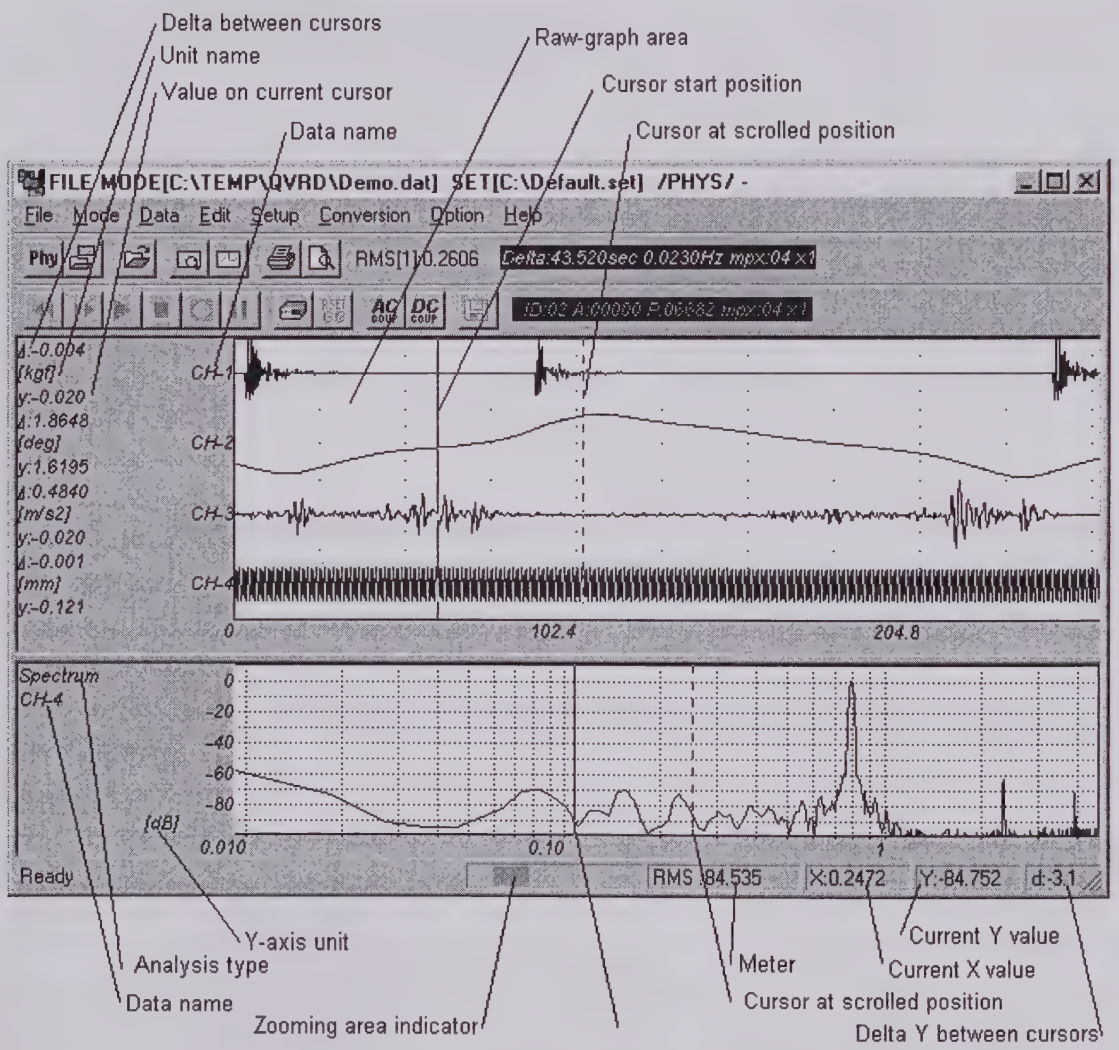


**Figure 1-6 Start window graph functions**

QuikVu-RX/Windows displays data during data transfer in SCOPE mode, and entire file as loaded in FILE mode.

### 1.2.1 Raw graph area functions

Raw graph area displays data graph.
In SCOPE mode, it displays data transferred from RX data-recorder during plot, and re-displays the data after plot is stopped.
In FILE mode, it displays entire data from the selected data file.
In case that channel-1 data was digital-input, it would be automatically detected and displayed as bit-stream. In this case the current values are displayed as bit-stream and either unit-name or min-max value would not be displayed.
This area has the following functions.

(1) To move cursors.

There are three kinds of cursor activities, (a) Linked (b) Independent (c) Highlignted.

a. Linked cursors provide a starting point cursor and a scrolling cursor. Position mouse cursor at the desired start point, click and drag to activate scrolling cursor.
b. Independent cursors are located at the ends of the graph display area. Move the mouse cursor to this area, click and drag each cursor to desired position.
c. These cursors define the area for zoom-up, analysis, AC/DC coupling and Refile. Click and drag this cursor to highlight the defined data area.

(2) To read data and time width

The current cursor gives you the current data, the difference of the data between the cursors, time width between the cursors in sec/msec and frequency displayed on the ToolBar.

(3) To change plot setting

Click on channel label (Data name) to pop up plot setup dialog for that channel.

### 1.2.2 Analysis graph area functions

Analysis graph area displays analysis result graph.
This area has the following functions.

(1) To display data

The dashed cursor provides X axis value at the intersection with the graph. The solid cursor provides the Y axis at the intersection with the graph.

(2) To zoom-up analysis graph

Only in Spectrum analysis, you may zoom-up data between the cursors. To zoom-up or restore-zoom, move the cursors in the analysis window, and use the zoom buttons as described in sec. 1-1-3,(4)c.

(3) To change analysis channel

Click on channel label (Data name) with mouse, this pops up channel select combobox to change channel.

(4) To change analysis

Click on analysis label (Analysis type name) with mouse, this pops up analysis select combobox to change analysis. If you move the cursor out of the box without closing, it pops up the analysis setting dialog box to change the settings.

## 1.3 QuikVu-RX/Windows remote contrtol functions

In the QuikVu-RX/Windows start window, [File][Remote] on MenuBar or Remote control button on ToolBar pops up Remote control dialog. (See Fig.1-9)
It operates RX data-recorder and display status, and provides search and misc. recording functions. The Data Copy function is in Search function.
Remote control dialog gives you TitleBar, MenuBar, RX data-recorder operation buttons, RX data-recorder status indicators, search function buttons, and Bar meter.

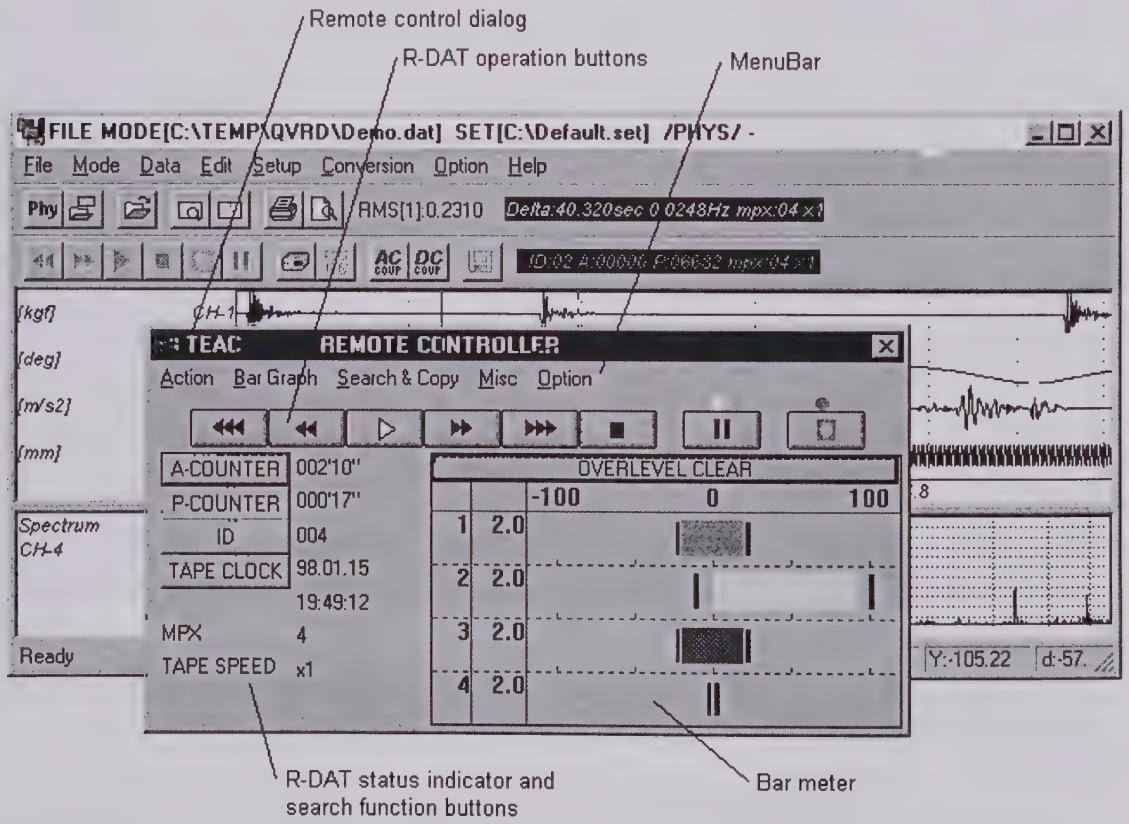


**Figure 1-7 Remote control dialog**

### 1.3.1 TitleBar

TitleBar displays selected I/O address.

### 1.3.2 MenuBar

MenuBar lets you go to the functions you want. The menu has the following functions.
The followings are general instructions, for details see section 3. Remote control dialog instructions.

(1) Action

| | |
|---|---|
| Exit : | Close Remote control dialog. |

(2) Bar Graph

| | |
|---|---|
| Attached Monitor : | Display bar graph monitor attached to remote. |
| Separated : | Display bar graph monitor separated from remote. |
| No bar : | No display of bar graph monitor. |

(3) Search & Copy

ID, ID+P-counter, A-counter and Clock search functions provide action after search. The selections are 'PAUSE','PLAY','Data copy' and 'SCOPE mode'.
And also here is 'Data Copy by Script' which automatically downloads multiple data parameters to create files.

| | |
|---|---|
| ID Search : | Setup and start ID search. |
| ID+P-counter : | Setup ansd start ID+P-counter search. |
| A-counter : | Setup and start A-counter search. |
| ID+Clock Search : | Setup and start ID+clock search. |
| END-mark : | Start END mark search. |
| Shuttle : | Setup and start Shuttle search. |
| Data Copy by Script : | Setup and start multiple Data Copy conditions. |

(4) Misc

| | |
|---|---|
| Auto Event : | Setup and start Auto-event recording. |
| Trigger REC : | Setup and start Trigger recording. |
| Interval REC : | Setup and start Interval recording. |
| View log : | Displays Misc recording log. |

(5) Option

| | |
|---|---|
| Configure : | Change I/O base address. |
| About : | Pop up About box. |

### 1.3.3 RX data-recorder status indicator and search function buttons.

RX data-recorder status indicator displays the front panel conditions of the current selected RX data-recorder. The conditions include A counter, P counter, ID, Tape clock (Date and time), MPX and tape speed.
Search function buttons pop up search function dialog explained above.

### 1.3.4 Bar meter

Bar meter displays current RX data-recorder ooutput data. Two types of displays; attached and separated, are available by selecting on MenuBar.
It has peak-hold and 'OVERLEVEL CLEAR' button clears the peak.

# 2. VIEW window

The functions in VIEW window can be accessed from MenuBar. Each MenuBar item. It has a sub menu, i.e. [File][Print].
The following instructions are detail, for these MenuBar items.

## 2.1 File

'File' menu group provides the functions as same as regular Windows applications do.
There are printing, load and save configuration file and Remote control function.

### 2.1.1 Remote

Pop up Remote control dialog to operate RX data-recorder and to search.
For detail, see section 3. Remote control dialog instruction.

### 2.1.2 Print

Pop up Print dialog and print out displayed raw data graph. (See Fig.2-1)
Print function prints the focused graph; if you want the Raw graph, click cursor in Raw graph area to print-out.

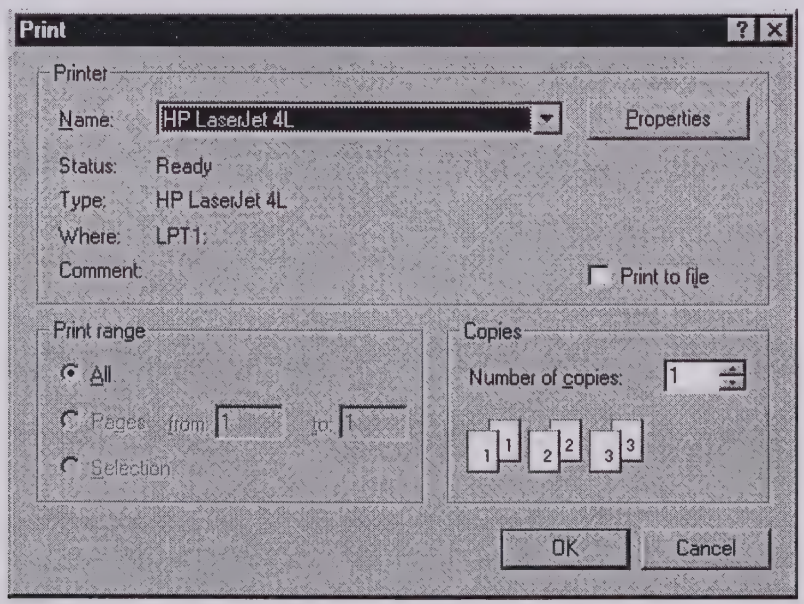


**Figure 2-1 Print dialog**

### 2.1.3 Print preview

Display print preview. (See Fig.2-2, 2-3)

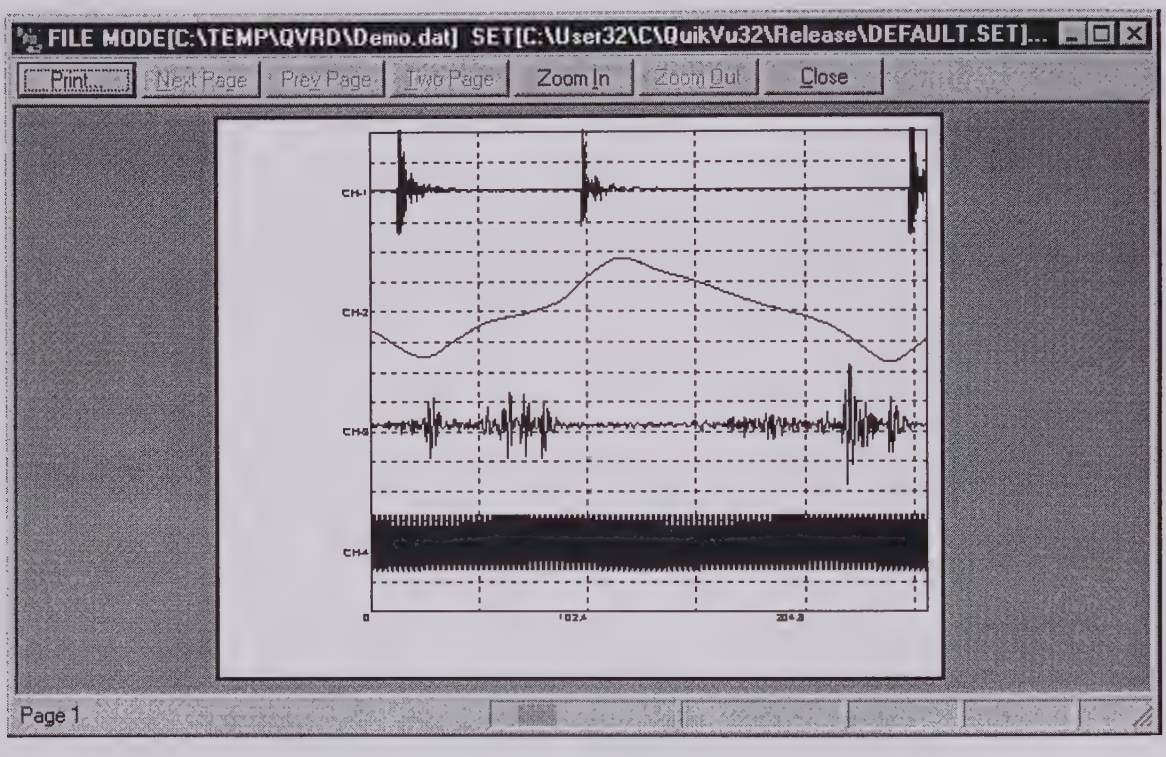


**Figure 2-2 Print preview for Raw graph**

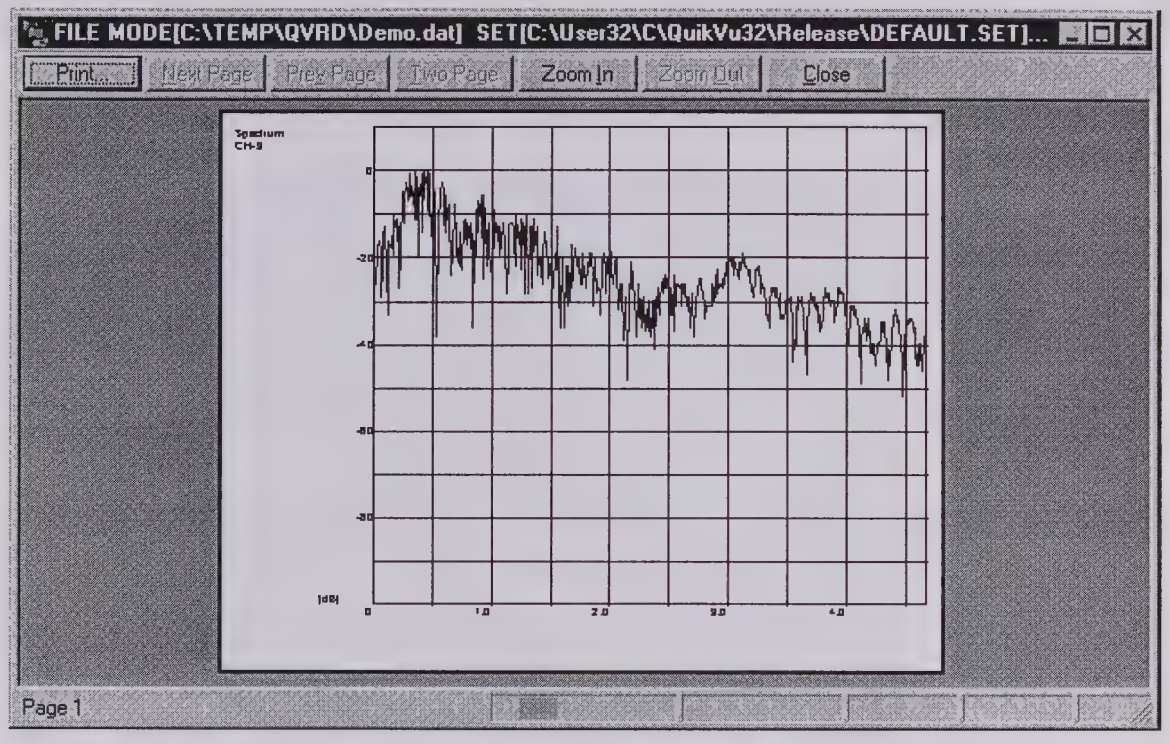


**Figure 2-3 Print preview for Analysis graph**

### 2.1.4 Print setup

Popup Print setup dialog to setup the printer. (See Fig.2-4)

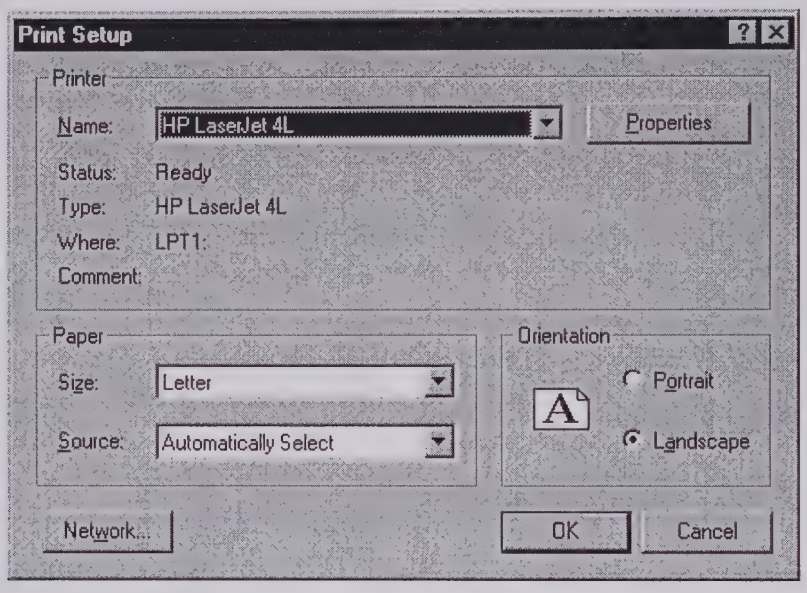


**Figure 2-4 Print setup dialog**

### 2.1.5 Print margin

Popup Print margin dialog to setup margin for the paper. (See Fig.2-5)

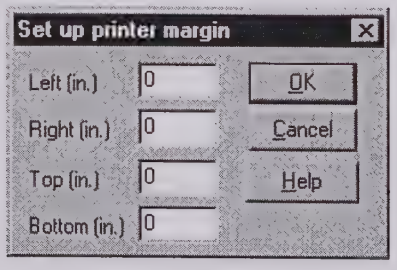


**Figure 2-5 Print margin dialog**

### 2.1.6 New SET File

Clear current configuration and return to default conditions.

### 2.1.7 Load SET File

Popup File dialog to select and to load SET file. (See Fig.2-6)
If you load SET file, the file name will be displayed on ToolBar as the current SET file.

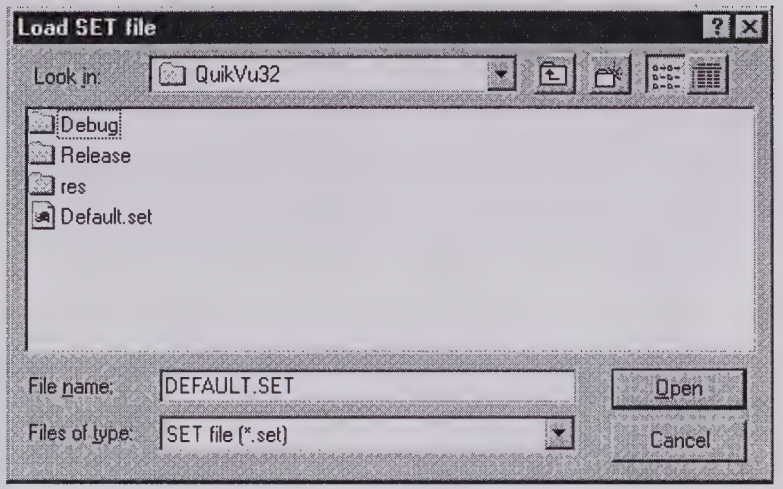


**Figure 2-6 Load SET file dialog**

### 2.1.8 Save SET File

Save SET file to the current SET file.

### 2.1.9 Save SET File As

Popup File dialog to define and to save SET file. (See Fig.2-7)

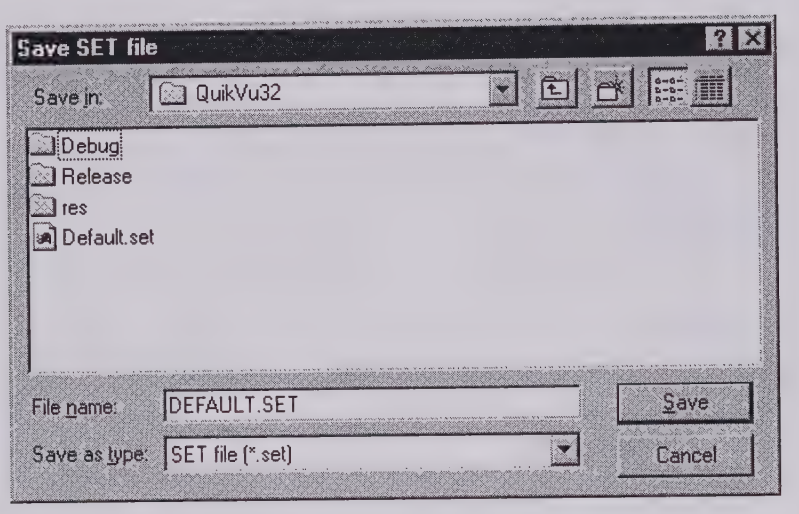


**Figure 2-7 Save SET file dialog**

### 2.1.11 Exit

Exit QuikVu-RX/Windows.
If there was anything different from the original configuration, QuikVu asks if you want to save the latest configuration.

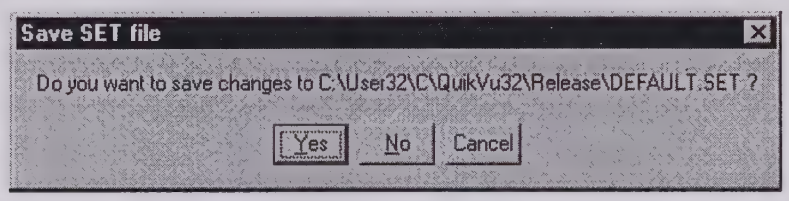


**Figure 2-8 Confirmation to save last configuration**

## 2.2 Mode

### 2.2.1 FileMode

Change to FILE mode. The data source will be QuikVu format data file.

### 2.2.2 ScopeMode

Change to SCOPE mode. The data source will be RX data-recorder and display will be an oscilloscope image.
This mode is good for displaying analysis result in real time.

### 2.3.1 OpenFile

Popup File dialog to select data file to load and view header. (See Fig.2-11)

(1) Select

Select file and close the dialog.

(2) Close

Cancel and close the dialog.

(3) View

Displays header information for selected data file. (Fig. 2-12)

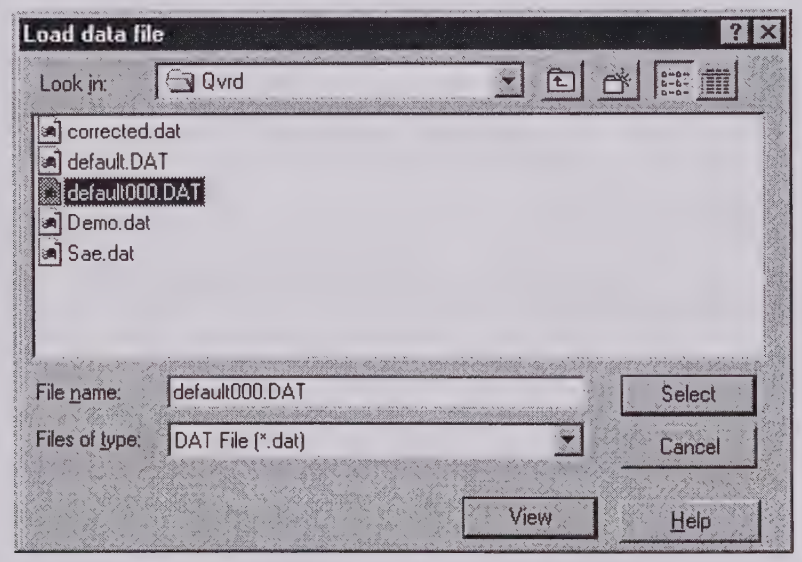


**Figure 2-9 Load and view data file dialog**

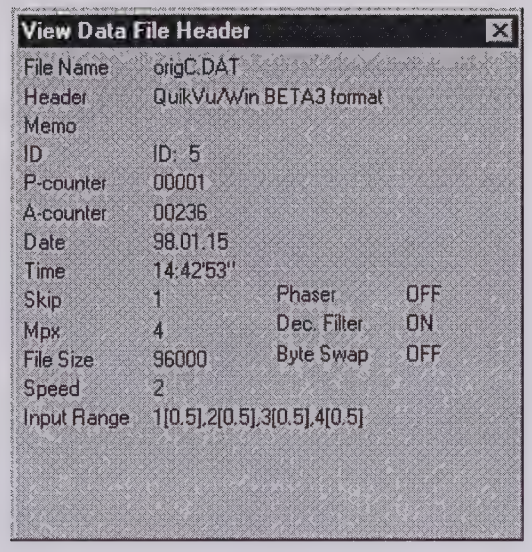


**Figure 2-10 View header**

### 2.3.2 View Current Header

Display current loaded data file information. (See Fig.2-12)

### 2.3.3 Refile

Popup Refile dialog to setup and to create file. (See Fig.2-13)

(1) Data Source

Displays data source. In FILE mode source file name is displayed. In other modes, mode name is displayed.

(2) Dest. File

Displays target file name. You can change the file name in CopySet Dialog by 'Copy Set' button.

(3) Copy Set

Popup data copy setup dialog to set parameters to create file. (See Fig.2-14).
File names and all data copy parameters can be set here.

(4) Start

Start data file creation. A progress meter is displayed during the file creation process.

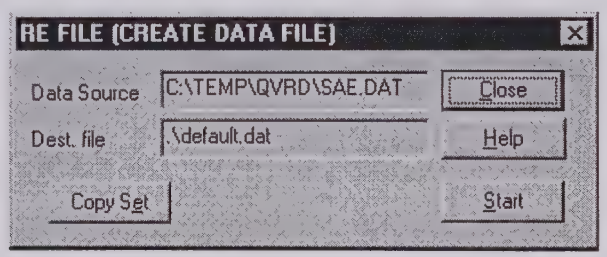


**Figure 2-11 Re-file dialog**

### 2.3.3.1 Data Copy Setup dialog

See '2-3-3. Data Copy Setup for SCOPE and CHART mode'.

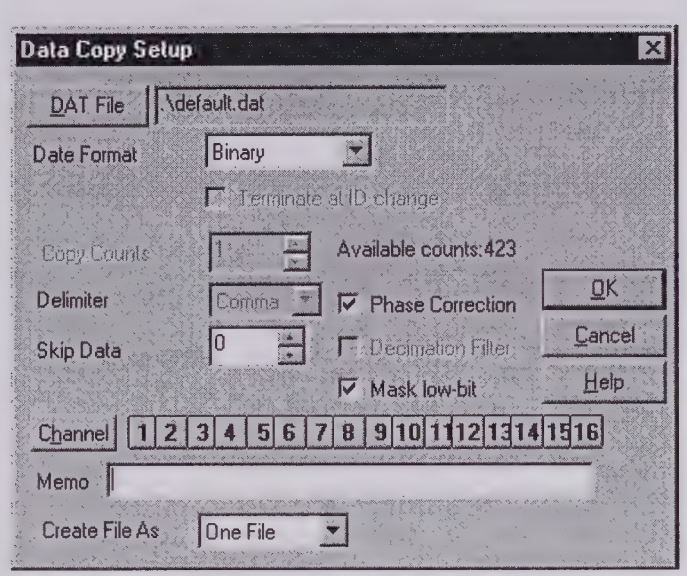


**Figure 2-12 Data Copy Setup dialog for Refile**

## 2.3.4 Data Copy Setup for SCOPE mode

Popup data copy setup dialog to set parameters for data copy in SCOPE mode. (See Fig.2-15)

(1) Target File

Open dialog pop-up to select or input the data file name.
If you clicked 'Auto No' or selected 'Separated' in 'Create File As', the file name would be modified like the followings.

a. Modified by 'Auto No'. SAMPLE###.DAT'
b. Modified by 'Separated' 'SAMPLE%%.DAT'
c. Modified by both 'SAMPLE###%%.DAT'
('###' and '%%' mean 3 or 2 digit number filled by zero. ie. 'SAMPLE001.DAT'.)
The file number '###' starts from zero but the channel number '%%' starts from one.

(2) Auto No

'Auto No' function automatically modifies the file name with 3-digit incremental counter, and this number starts from the number set in the box below.

(3) Data Format

Select data file format from 'Binary (QuikVu format)', 'Byte-swap', 'ASCII-I (ASCII integer)', 'ASCII-V (ASCII in voltage), 'ASCII-EU (ASCII in engineering unit), 'MATLAB', 'DADISP', 'Snapmaster', 'WAV', 'ATI (Voltage) and ATI (EU) formats.
'Delimiter' selection is available only in case that 'ASCII-I' or 'ASCII-V' was selected.

(4) Create Data Size

Input the data length in count. It is same as time in second if data was recorded in '1x' speed, but it is twice the time in seconds if recorded in '2x' speed.

(5) Delimiter

Select delimiter to separate each channel data for ASCII format data file like 'ASCII-I', 'ASCII-V' or 'ASCII-EU'. The delimiter can be selected from 'comma', 'space', 'Semicolon', 'Tab' and 'Equal'.

(6) Skip Data

Input the number to skip sampling data from the original. It reduces data file size but the sampling frequency of your data (Frequency response) becomes smaller.
This number makes the data size into 1 / (skip + 1).
For example skip = 1 shrinks the data size to be half.

(7) Filter

Enable the decimation filter.
Provides alias protection in 'skip data' (decimation) function.

(8) Phase Correction

Enable phase-correction filter.
Ensures minimal phase difference between channels in data files.

(9) Mask low-bit

Enable mask low-bit to avoid to get unnecessary error. If it is enabled, the data-file does not contain any information like data, time and range-settings.

(10) Channel

The push-buttons labeled as '1' to '16' enables / disables each channel for the data copy. Black label means enabled and shaded label means disabled.
With pushing the button labeled as 'Channel', you can change this enabled channel combination easily.

(11) Memo

Input memo for the data file, the length is up to 255 characters.

(12) Create File As

Allows data file to be created as one file, to be separate files by channel.
If 'Separated' is selected, the file name would be modified as explained in '(1) Target File'. And the number will be the channel number.

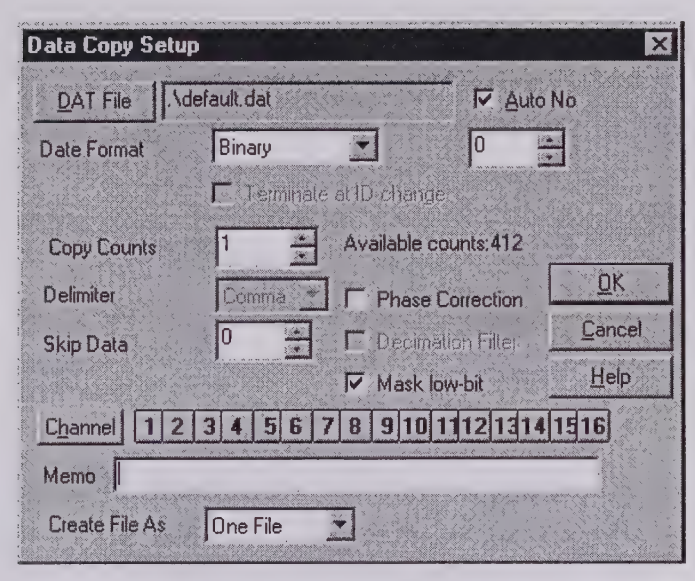


**Figure 2-13 Data Copy Setup dialog**

## 2.4 Edit

Edit menu group provides Copy function which read selected data by cursors, and copies data onto Clipboard as well as to the Windows applications. The values depend on the selected Unit-mode.

### 2.4.1 Copy

Copy data onto the clipboard.

### 2.4.2 Clipboard setting

Since clipboard capacity is very small, skipping data is needed for large data. Channels to be copied can also be selected. (See Fig.2-16)

(1) Decimation

Input decimation value to reduce the data file size.

(2) Channel

Select data channels you want to copy.

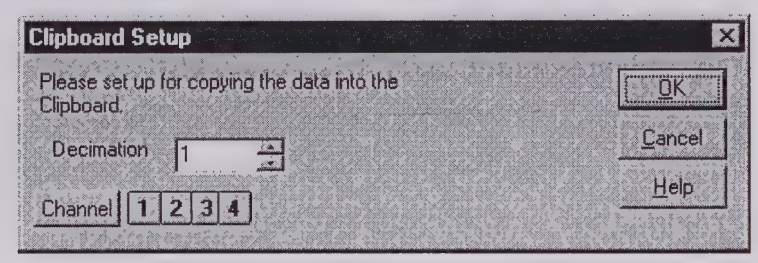


**Figure 2-14 Clipboard setup dialog**

## 2.5 Setup

Setup item provides four sub-menu items, and each item has an additional layer.
The following instructions are details for each sub-menu item.

### 2.5.1 PlotPanel

#### 2.5.1.1 PlotPanel

PlotPanel setup for raw graph display settings. (See Fig.2-17)
Double-click any channel setting in ListBox to go to Channel setup dialog.

(1) Channel setting information

This displays all channel settings.
By double-clicking any item for each channel, 'Channel setup' dialog pops up to set raw graph conditions for each channel.

(2) Channel

The push-buttons labeled as '1' to '16' enables / disables each channel for display. Black label means enabled and shaded label means disabled.
By pushing the button labeled as 'Channel', you can change this enabled channel combination easily.

(3) PLOT AXIS

Select the display of each channel graph as 'Overlay' or 'Separate'.

(4) Meter

Select the type of meter displayed on the status bar from 'AVE', 'RMS', 'MIN' and 'MAX'.
If 'N/A' is selected nothing wll be displayed.

(5) CH

Select data channel for meter function.

(6) Auto Gain (%)

Input percentage in the displayed range to set gain.

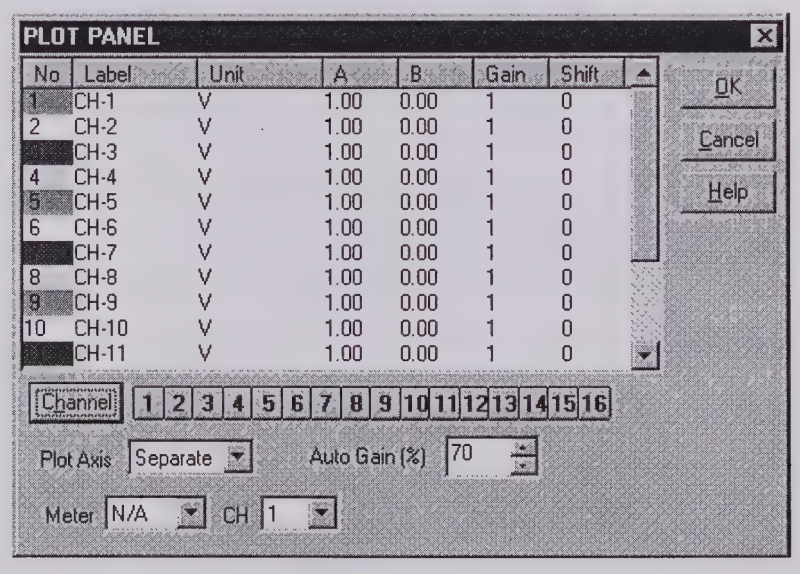


**Figure 2-15 Plot panel setup dialog**

### 2.5.1.2 Channel setup

Channel setup modifies graph setting for each channel. This dialog is also available from raw graph area directly by clicking channel data name. (See Fig.2-18)

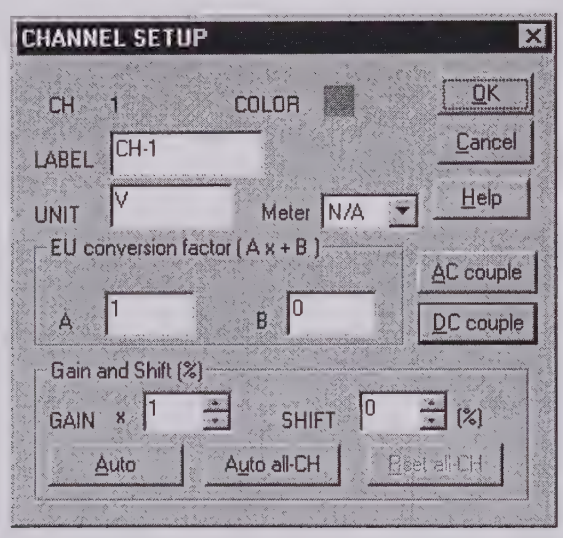


**Figure 2-16 Channel setup dialog**

(1) CH

Display channel number for the setting.

(2) Color

Display the color for the data. You can change the color in Color Dialog which pop-up with double-click on this box.

(3) Label, Unit

Input the label/unit for the channel.

(4) Meter

Select meter for the channel. If any meter was not selected or any other channel was set for the meter, here would be 'N/A', but if you selected any meter for this channel, any other channel meter settings will be cancelled.

(5) EU conversion factors

Input A-B factor for the formula $y = Ax + B$ (x: voltage).

(6) AC couple, DC couple

Pop-up AC/DC couple result. In Physical-conversion mode for Unit-mode, you can see the calculated value in order to determine the A-B factor.

(7) Gain and Shift

Input Gain and Shift for data displayed on graph.

(8) Auto, Auto all-CH, Reset all-CH

Calculate Auto gain-zero for a channel or all of the channels then change the Gain-Shift values. Reset all-CH sets A as 1 and B as 0 for all of the channels.

## 2.5.2 ScopeSetting

### 2.5.2.1 Scope setup

Scope setup modifies data sampling condition for SCOPE mode. (See Fig.2-19)
Double-click any channel setting in ListBox to pop-up Trigger setup dialog.

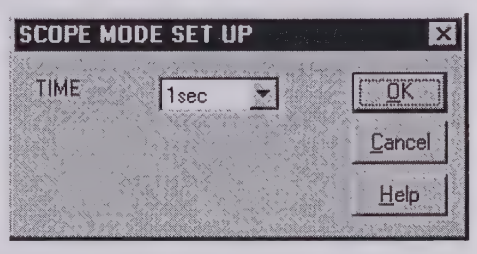


**Figure 2-17 Scope setup dialog**

(1) Time

Select time for the graph.

### 2.5.4 Analysis

If Analysis menu item was selected, another menu layer appears and analysis method can be selected here. Available analysis items are the following.

#### 2.5.4.1 Spectrum

Spectrum analysis presents frequency spectrum result by FFT. As pre-process, windowing and filtration are available. (See Fig.2-21)
FFT sampling number is selectable from 256, 512 and 1024. Maximum analyzed frequency is selectable for obtaining higher or lower resolution in the analysis window.

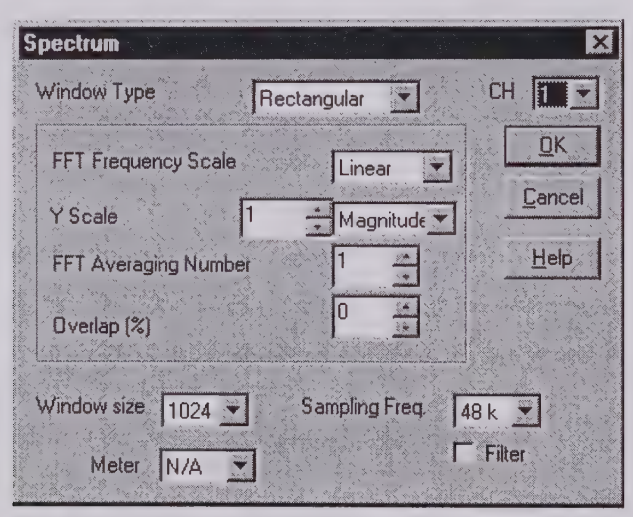


**Figure 2-18 Spectrum setup dialog**

(1) CH

Select channel number to be set.

(2) Window

Select Window size.

(3) FFT frequency scale

Select Linear or Log scale.

(4) Y Scale

Select Magnitude or dB. If Magnitude is selected, the gain can be set.

(5) FFT Averaging Number

Input FFT averaging number.

(6) Overlap (%)

Input overlap percentage for FFT averaging.

(7) Window size

Select FFT window size (the number of FFT points) from 1024 to 64.

(8) Sampling Freq.

Select sampling frequency. This selects the maximum frequency of the spectrum (Nyquist frequency), but it depends on MPX.

(9) Filter

Enable/disable the decimation filter to avoid aliasing. If the spectrum sampling frequency matches the original sampling frequency of the recorded data, the filter will be ignored.

(10) Meter

Select the type of meter for the analysis graph.

### 2.5.4.2 Autocorrelation and Crosscorrelation

Autocorrelation and Crosscorrelation display correlation for selected channel data.
In Autocorrelation only one channel is selectable and in Crosscorrelation two channels are selectable.

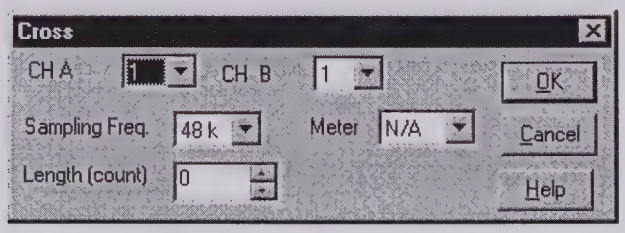


**Figure 2-19 Analysis channel select dialog**

(1) CH, Sampling Freq., Meter

See 2-5-4-1. Spectrum.

(2) Length (count)

Input data length you want to get analysis result in count. When you click 'OK' total data number automatically will be calculated then the warning will come up if data number is too big for the calculation.

### 2.5.4.3 Filtration

Filtration displays filtered data by LPF,HPF,BPF or BRF. (See Fig.2-23)
If [OK] button was pressed, the application calculates the number of the filter coefficient first. If this number exceeds 50, the error message pops up and this setting will be refused because filter calculation will take an inordinate amount of time.
If this number does not exceed 50, the coefficients will be calculated, stored as file and utilized for analysis.

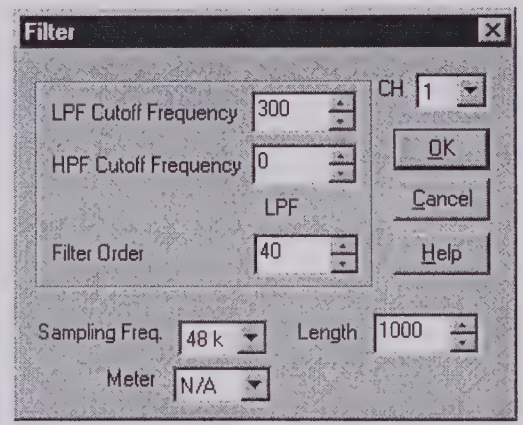


**Figure 2-20 Filtration setup dialog**

(1) Low/High pass filter

Input cut-off frequencies for low-pass and high-pass filters. Filter will be displayed below as 'LPF', 'HPF', 'BPF' or 'BRF'.

(2) Filter Order

Input filter order.

### 2.5.4.4 1st derivatives, 2nd derivatives and Integrals

Displays the results of derivatives and integrals. One channel for analysis must be selected.

### 2.5.4.5 Calculate by Equation

The calculation result defined by the formula in the 'Formula' window is displayed.
The operations '+', '-', '*', '/' and brackets are available. Channels can be input into the equation by using "#" before the channel number. (See Fig.2-24)

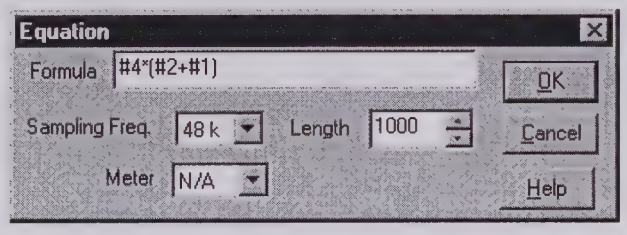


**Figure 2-21 Calculate by Equation setup dialog**

## 2.6 Conversion

QuikVu has three kinds of data-conversion, (a) Binary, (b) Voltage and (c) Physical value.

(a) Displays integer A/D converted value, no unit label is displayed. This range is from -32768 to +32767.
(b) Displays voltage value of the data. The unit label is always 'V'.
(c) Displays the value calculated by the formula 'y = Ax + B'; x : voltage, A/B : A-B factor input in Channel setting dialog. The unit name is what was input in Channel setting dialogbox.

## 2.7 Option

Hardware configuration and display appearance are set here.

### 2.7.1 Configure

(1) Memory Map

Setup memory map address for QuikVu-RX interface card.

(2) IRQ Channel

Set up interrupt request channel for QuikVu-RX interface card.

(3) I/O Address

Setup I/O base address for QuikVu-RX interface card. I/O base address are displayed on TitleBar. (See Fig.2-25)

(4) Change buffer size

Change buffer size for data downloading. (See 2.7.1.1 Buffer size setup)
This function is in View window only, not available in remote control dialog box.

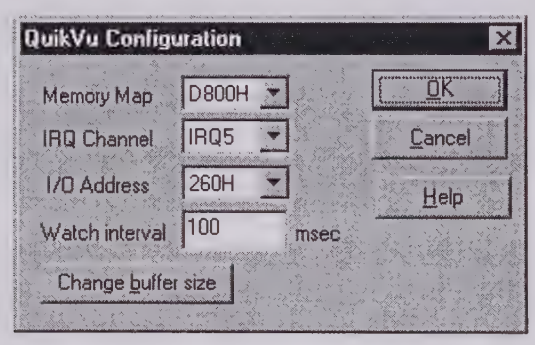


**Figure 2-22 Config setup dialog**

### 2.7.1.1 Buffer size setup

(1) Data copy

Input buffer size in counts for data copy. It automatically calculates the buffer size in Mbytes to display.
When you close this dialog box with 'OK', it automatically tries to allocate the buffer. If it is unable to allocate, the warning message will come up.
If your previous allocated buffer size is almost limitation for your environment and you try to allocate larger size, it might refuse the new size, because it doesn't release the previous buffer until you get out this dialog box. In this case, please setup minimum size (=20 counts) and press 'OK', then get in this dialog again to setup new buffer size.

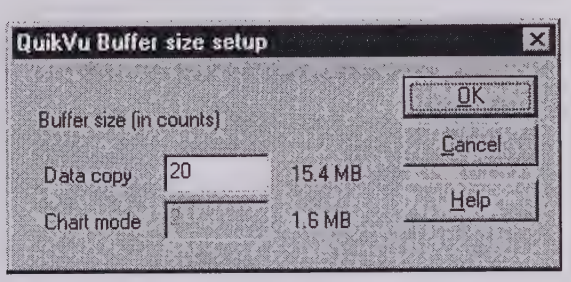


**Figure 2-23 Buffer size setup dialog**

### 2.7.2 Environment

Environment dialog to set appearance for VIEW window. (See Fig.2-26)

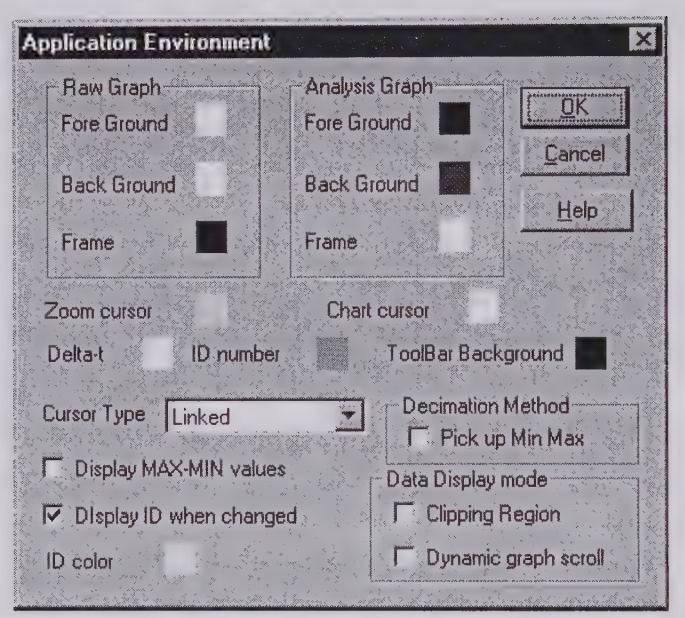


**Figure 2-24 Environment setup dialog**

(1) Raw/Analysis Graph color

Display current colors for Foreground, Background and Frame. Color can be change by color boxes.

(2) Zoom/Chart cursor

Display current color for the cursors. Color can be changed by double-clicking color boxes.

(3) Delta-t, ToolBar background (Color)

Display current colors for Dalta-t and ToolBar background on ToolBar.

(4) Cursor Type

QuikVu has three types of cursors. For details see '1-2-1. Raw graph area functions, (1) To move cursors.'

(5) Display MAX-MIN value

To enable/disable display of maximum and minimum values on the right side of the graph of each channel. These values mean maximum and minimum value defined by the conversion mode.

(6) Data Display mode

(a) Clipping Region

Enable/disable display of clipped data graph.

(b) Dynamic graph scroll

Enable/disable the dynamic graph scroll. After zoom-up the graph can be scrolled by moving the cursor in 'Zoomed area indicator' on StatusBar. In dynamic scroll mode, data graph is not always at highest resolution, disable the dynamic scroll to improve the resolution.

### 2.7.3 Font

Font dialog setup font used in VIEW window. (See Fig.2-27)

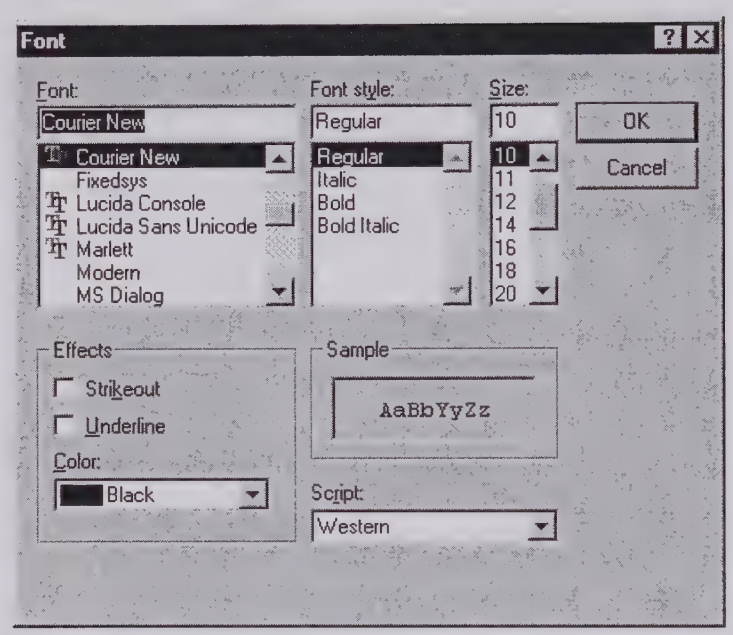


**Figure 2-25 Font setup dialog**

## 2.8 Help

### 2.8.1 Using Help

Pop-up Help window with 'Using Help' document.

### 2.8.2 Help Finder

Pop-up Help window and index to find topic.

### 2.8.3 About

**Pop-up About dialog to see Application name, version, etc.**

# 3. Remote control dialog

The functions in Remote control dialog can be accessed from MenuBar. Each MenuBar item has a sub menu, i.e. [Option][About].
The following instructions are details for these MenuBar items.

## 3.1 Action

### 3.1.1 Exit

Close Remote control dialog and return to VIEW window.

## 3.2 BarGraph

You can change the Bar graph appearance between Attached, Separated and No bar.

## 3.3 Search

There are six types of search functions and four of them are available in Remote control dialog by pushing button ('A-COUNTER', 'P_COUNTER', 'ID' or 'TAPE CLOCK') directly.

### 3.3.1 ID search

'ID search' is search function by the ID number on the tape. (See Fig.3-1)
'PLAY', 'PAUSE', 'DATA COPY', 'CHART' and 'SCOPE' are selectable as the task after search.
These functions are available also in 'ID+P-counter', 'A-counter' and 'Clock search'.

(1) ID Target

Input the target ID.

(2) Task after search

(a) 'PLAY'
Play back RX data-recorder after search ends.

(b) 'PAUSE'
Pause RX data-recorder after search ends.

(c) 'DATA COPY'
Start to download data when RX data-recorder found the search point.
You can setup for Data Copy with the button 'Set'. (See '2-3-3. Data copy setup') The Data Copy setup dialog is Fig-3-2.

(3) Prompt when search finished

Pop up the message box when the search point was found.

(4) Search

Start Search and save the settings.

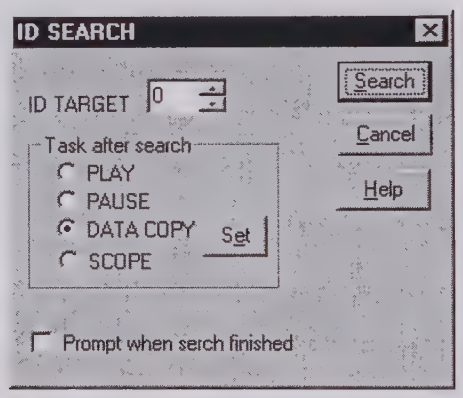


**Figure 3-1 ID search setup dialog**

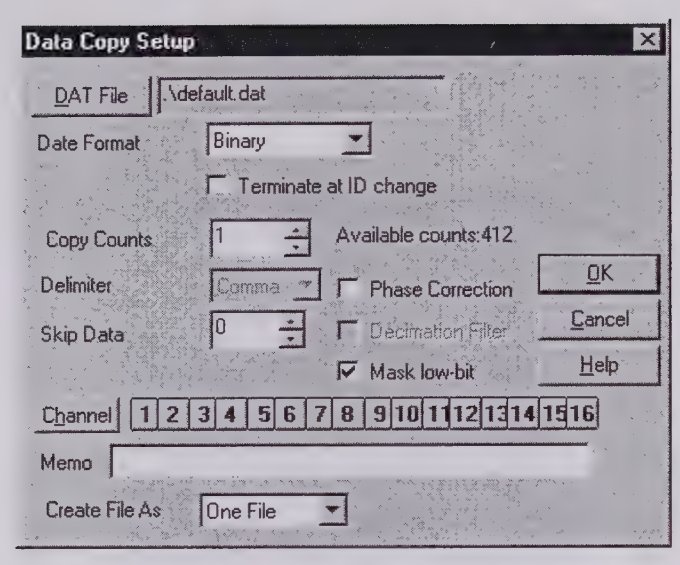


**Figure 3-2 Copy setup dialog in REMOTE**

### 3.3.2 ID+P-counter

'ID+P-counter' is search function by a combination of the ID number + program counter.

(1) ID Target

See 3-3-1.

(2) P-counter

Input programmed-counter value to search.

(3) Select task after search, and if a prompt is desired after search is completed.

See 3-3-1.

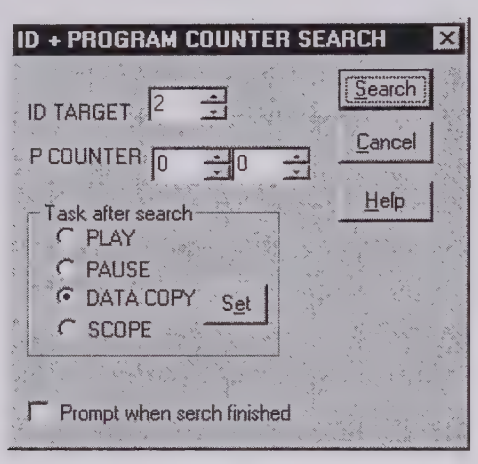


**Figure 3-3 ID+P counter search setup dialog**

### 3.3.3 A-counter

'A-counter' is search by absolute counter. (See Fig.3-4)

(1) A-counter

Input absolute-counter value to search.

(2) Select task after search, and if a prompt is desired after search is completed.

See 3-3-1.

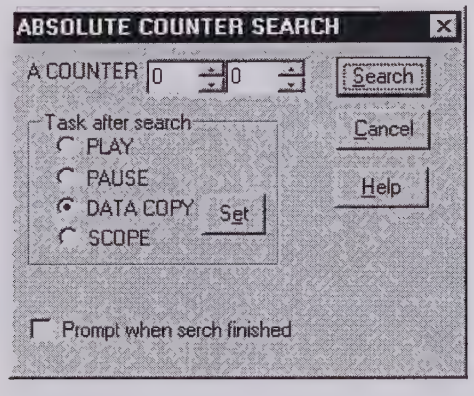


**Figure 3-4 A counter search setup dialog**

### 3.3.4 Clock search

'Clock search' searches by date and time. (See Fig.3-3-4)

(1) Date/Time

Input date and time to search. If QuikVu found there is not such a date and time, displays error message and stop the procedure.

(2) Select task after search, and if a prompt is desired after search is completed.

See 3-3-1.

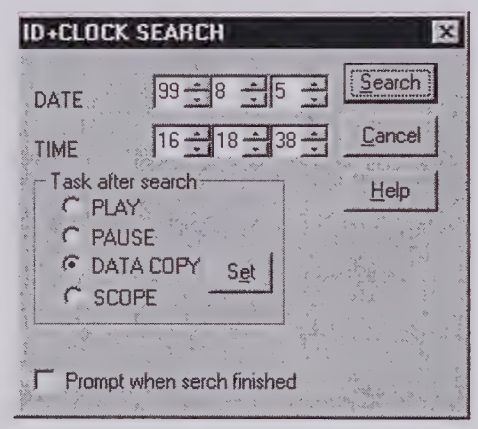


**Figure 3-5 Clock search setup dialog**

### 3.3.5 END mark

Select 'END mark' to search for END mark on the tape. (See Fig.3-6)

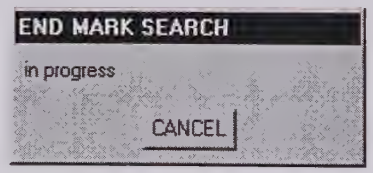


**Figure 3-6 END mark search dialog**

### 3.3.6 Shuttle

'Shuttle' setup and starts shuttle search. (See Fig.3-7)
Shuttle searches for target point and plays back for selected 'PLAY COUNTS' and 'REPEAT TIMES'.

(1) Start ID, Start P-counter

Input the ID and program counter as start point.

(2) Play counts

Input the length in counts to play-back.

(3) Repeat Times

Input repeat times to play.

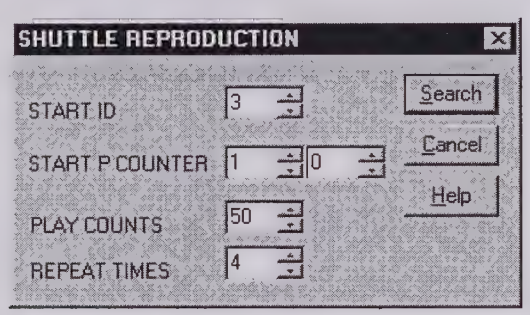


**Figure 3-7 Shuttle search setup dialog**

### 3.3.7 Data Copy Script

'Data Copy Script' setup and start Data Copy automation by the script. (Fig.3-8)
Script for automatic data copy can be created with this dialog. (See '2-3-3. Data copy setup')
Once started, the 'Data Copy Script' will automatically download data to file as programmed.
The parameters for each file are listed in the display and can be maximized or enlarged for easier viewing.

(1) File on MenuBar

a. Load Script File
Open File dialog and select the script file to load for Data Copy Script procedure.

b. Save Script File
Open File dialog to save the script file.

c. Close
Close Data Copy Script dialog.

(2) Search

Select search type from 'A-counter' and 'P-counter' search for each job.

(3) P-counter, A-counter

Input programmed or absolute counter value for each job.

(4) ID Target

Input the target ID for each job.

(5) Data Copy Script list

Display and select job.
You can open Copy Setup dialog by double-clicking any item in this list.

(6) Accept

Accept and update the setting for the selected job.

(7) Remove

Remove the selected job.

(8) Remove All

Remove all of the jobs.

(9) Auto No

Select auto numbering for the file name from 'Increment', 'On ID' and 'N/A'. 'Increment' just increments number, but 'On ID' puts number in order to the ID number. If there are duplicate ID in the list, the message box will pop up.
Data Copy Setup for SCOPE mode (1) Target File'. The number of the file name starts at the number set in the next box.

(10) Start

Check the available disk space and duplicate file name, then start Data Copy Script. During this procedure, everything except 'Cancel' is disabled.

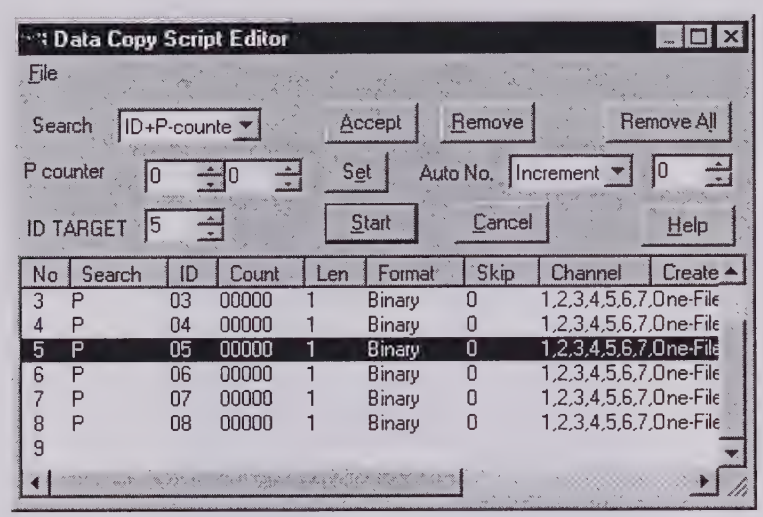


**Figure 3-8 Data Copy Script setup dialog**

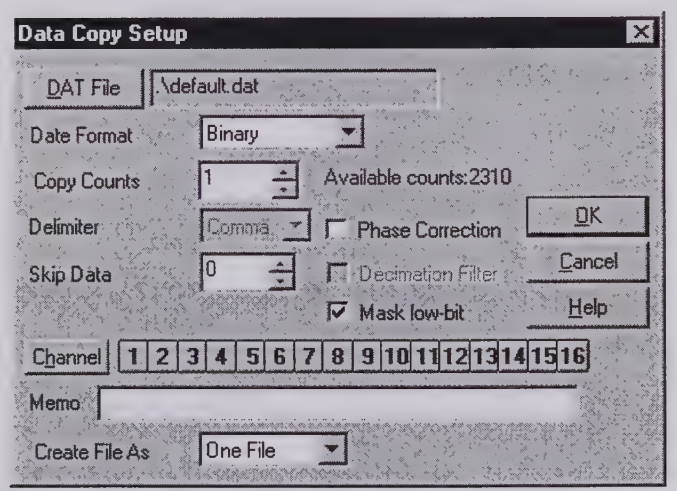


**Figure 3-9 Data Copy Setup for Data Copy Script**

## 3.4 Misc

### 3.4.1 Auto Event

'Auto Event' setup and start auto-event recording.
If auto-event recording started, R-DAT enters REC-PLAY mode to record data.
If trigger starts, R-DAT will increment ID and notes this in 'View Log'.
By double-clicking the list-box, Auto-event condition can be set. (See Fig 3-12, 3-13)
Set for analog or digital trigger, event record on any of the 14 parallel bits may be selected.

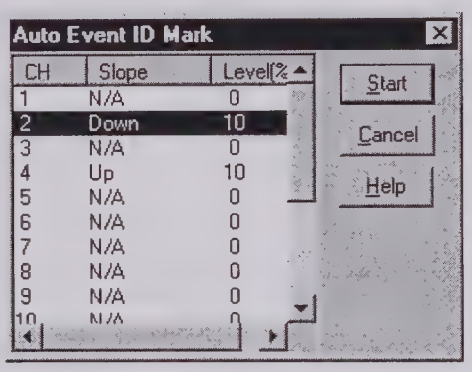


**Figure 3-10 Auto event recording setup dialog**

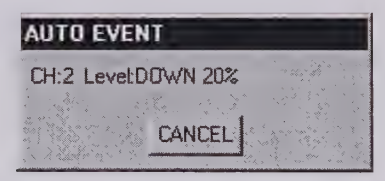


**Figure 3-11 Auto event recording 'in progress' dialog**

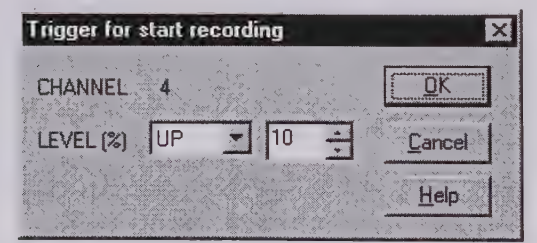


**Figure 3-12 Trigger setup dialog**

### 3.4.2 Trigger REC

'Trigger REC' setup and start trigger recording.
During trigger recording, the application is watching defined channel data with R-DAT in REC-PAUSE. R-DAT records when trigger is reached for defined time.

Trigger record conditions can be set by double-clicking on the list-box. (See Fig 3-12, 3-13)
Channel 1 can be set for analog or digital trigger, trigger record on any of the 14 parallel bits may be selected.

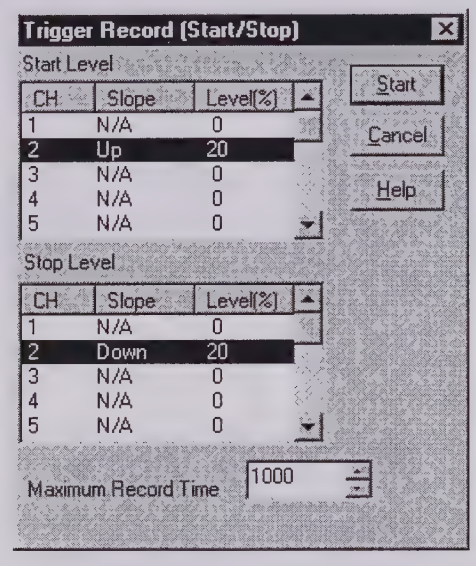


**Figure 3-13 Trigger recording setup dialog**

**Figure 3-14 Trigger recording 'in progress' dialog**

### 3.4.3 Interval REC

'Interval REC' setup and starts interval recording.
During interval recording, the application is watching PC clock with R-DAT in REC-PAUSE. The R-DAT starts to record at the programmed time, for the programmed duration.

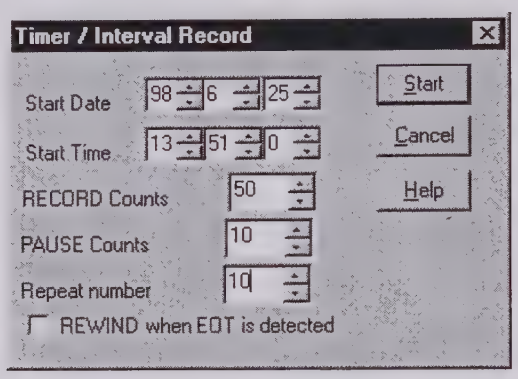


**Figure 3-15 Interval recording setup dialog**

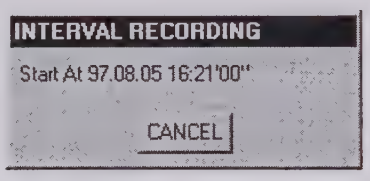


**Figure 3-16 Interval recording 'in progress' dialog**

### 3.4.4 View log

View log displays recording log; ID, A counter, date, start time and end time.

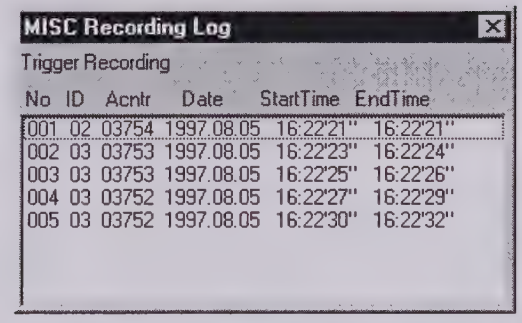


**Figure 3-17 Misc recording log**

## 3.5 Option

### 3.5.1 Configure

See '2-7-1. Configure'.

### 3.5.2 About

See '2-8-3 About'

# 4. Setup QuikVu-RX/Windows

## 4.1 Installation procedure

(1) Start setup

QuikVu-RX/Windows setup-disk consists of two diskettes labeled 'disk-1' and 'disk-2'.
Please insert the diskette labeled 'disk-1' and run 'SETUP.EXE' first.
To run it, please open [Start][Run] first, then input 'A:SETUP' and press 'OK.'
When the setup procedure starts, Setup window will come up and WELCOME dialog will pop-up. Follow the prompts to continue the installation.

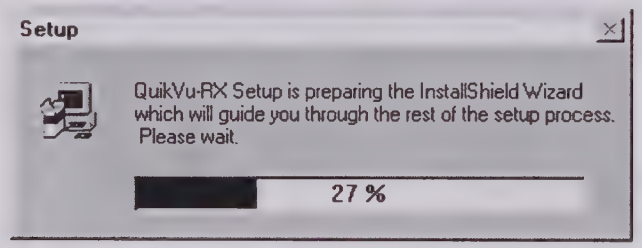
Setup
QuikVu-RX Setup is preparing the InstallShield Wizard which will guide you through the rest of the setup process. Please wait.
27 %

**Figure 4-1 Setup and initializing dialog**

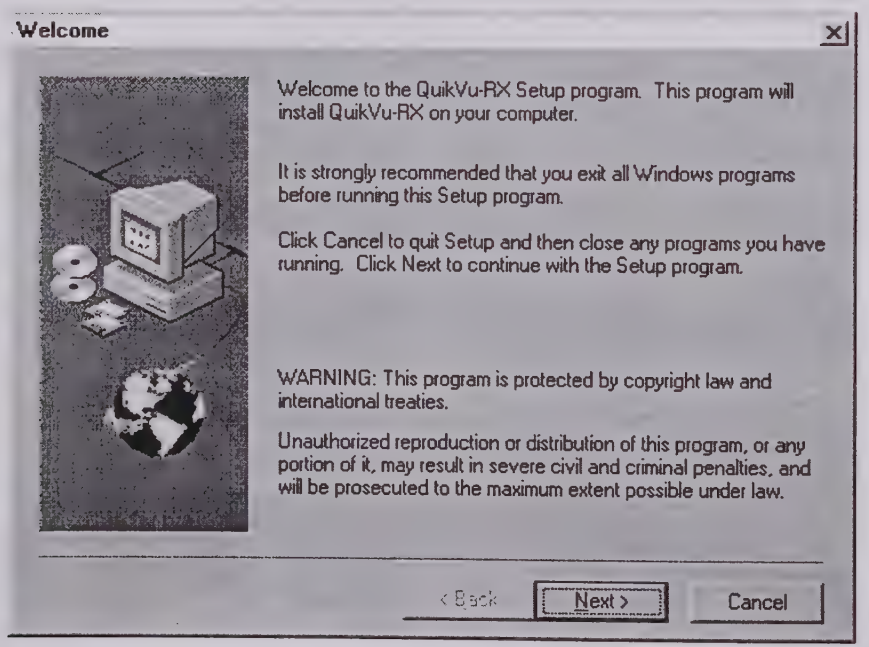
Welcome
Welcome to the QuikVu-RX Setup program. This program will install QuikVu-RX on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
< Back
Next >
Cancel

**Figure 4-2 Welcome dialog**

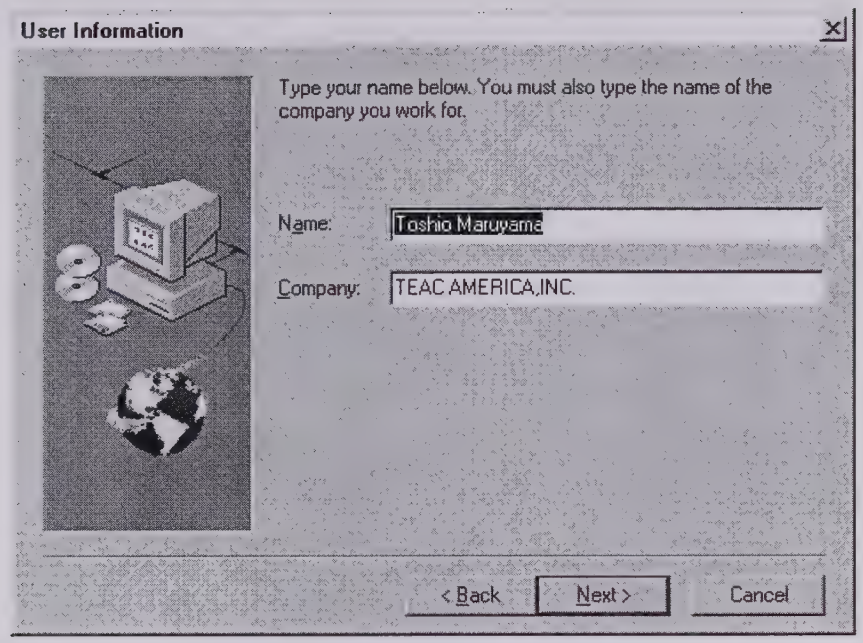


**Figure 4-3 User Information dialog**

(2) Choose Destination Location

In the following dialogbox (Fig.4-4), the setup procedure asks you where you want to install QuikVu/Windows. The default directory is already set but this directory can be changed using 'Browse' button.
After the directory is set, click on 'Next'.

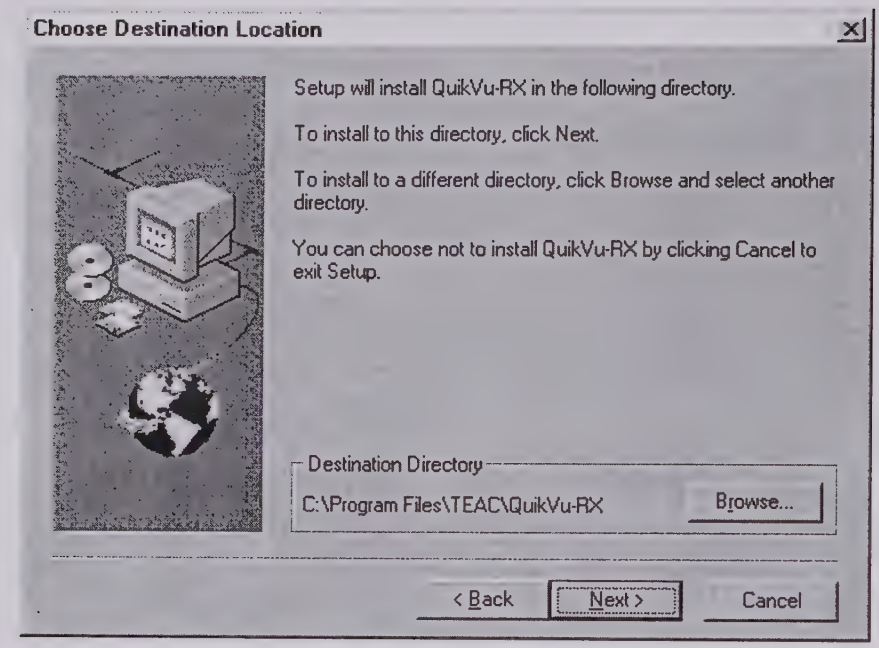
Choose Destination Location
Setup will install QuikVu-RX in the following directory.
To install to this directory, click Next.
To install to a different directory, click Browse and select another directory.
You can choose not to install QuikVu-RX by clicking Cancel to exit Setup.
Destination Directory
C:\Program Files\TEAC\QuikVu-RX
Browse...
< Back
Next >
Cancel

**Figure 4-4 Choose Destination Location**

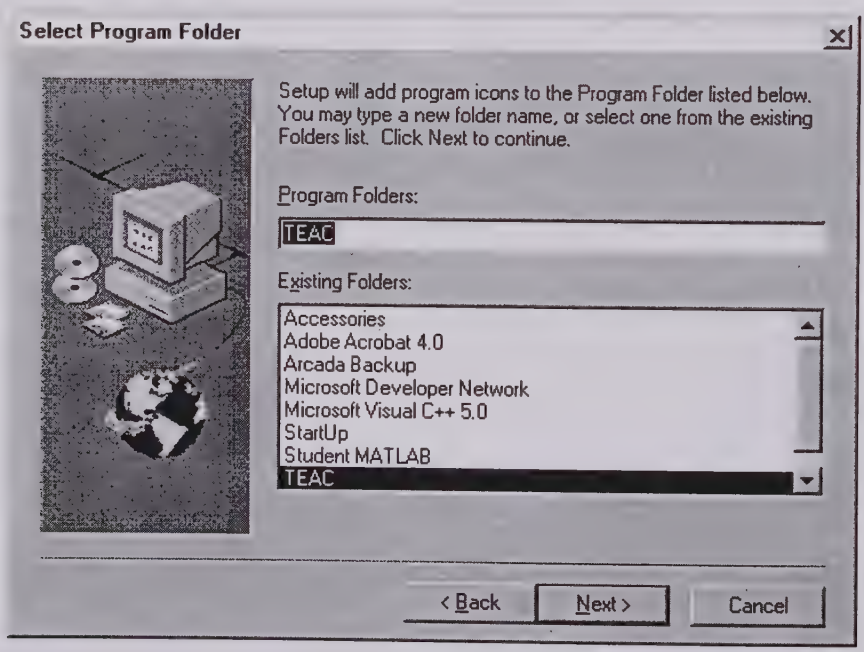
Select Program Folder
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing Folders list. Click Next to continue.
Program Folders:
TEAC
Existing Folders:
Accessories
Adobe Acrobat 4.0
Arcada Backup
Microsoft Developer Network
Microsoft Visual C++ 5.0
StartUp
Student MATLAB
TEAC
< Back
Next >
Cancel

**Figure 4-5 Select Program Folder**

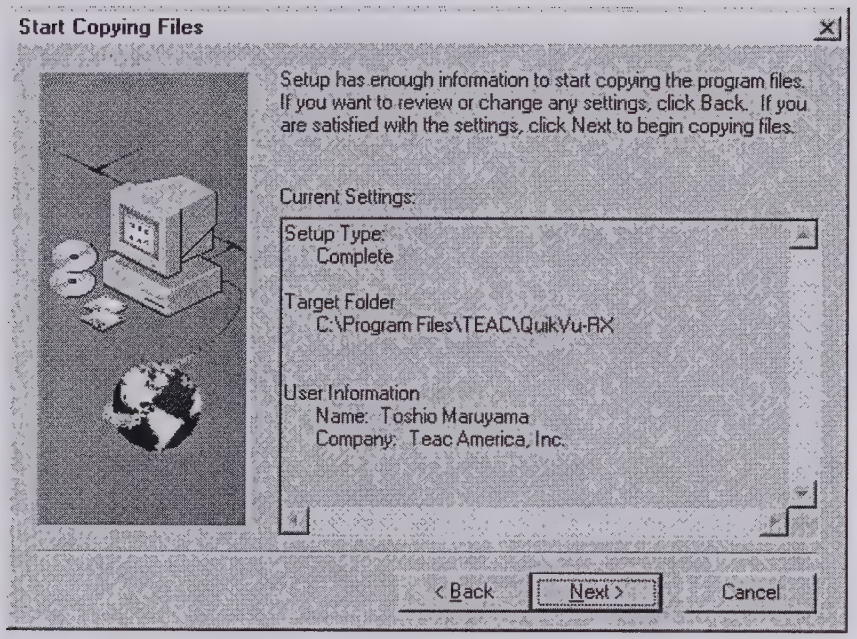
Start Copying Files
Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.
Current Settings:
Setup Type:
Complete
Target Folder
C:\Program Files\TEAC\QuikVu-RX
User Information
Name: Toshio Maruyama
Company: Teac America, Inc.
< Back
Next >
Cancel

**Figure 4-6 Start Copying Files**

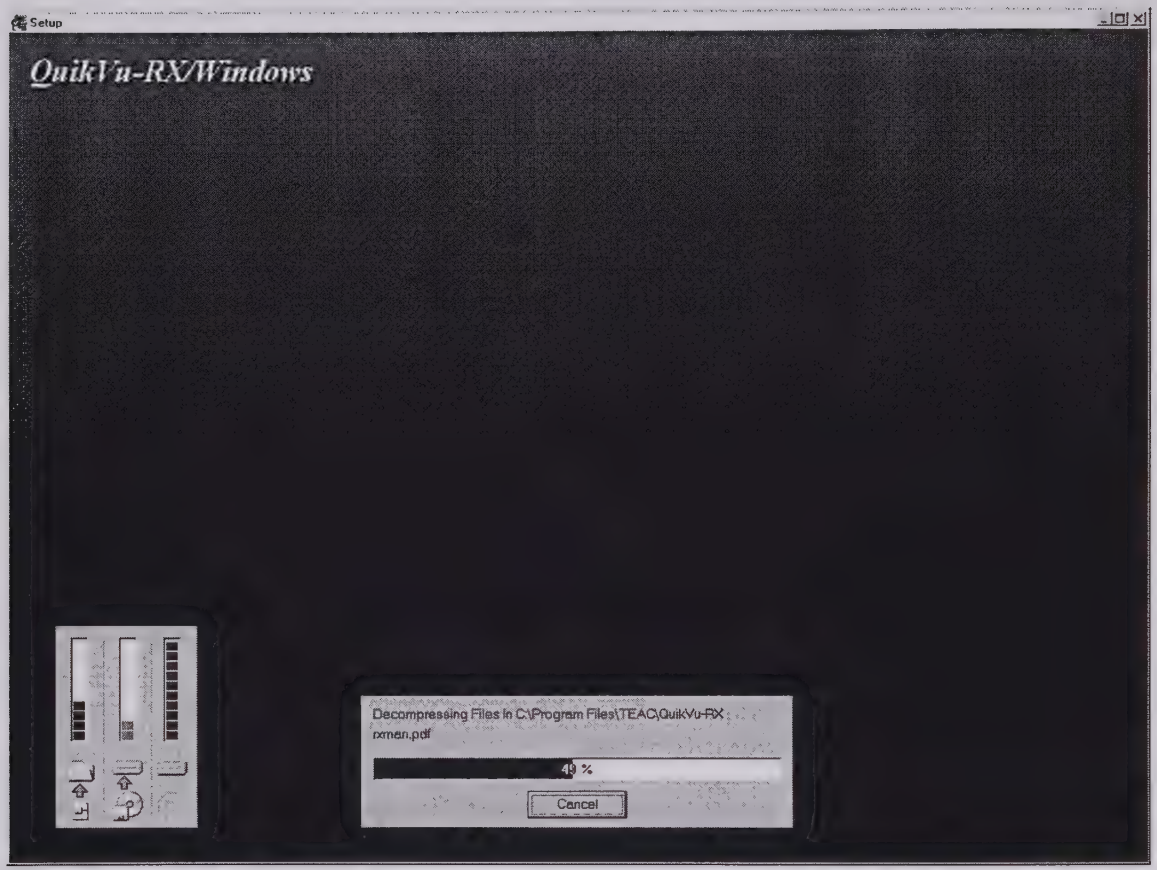


**Figure 4-7 Installing software**

(3) Setup Complete

If the setup procedure installed properly, the following dialogbox will pop up.(Fig.4-8) It also automatically creates a group-folder.(Fig.4-9)
Readme file may be opened, and/or QuikVu can be launched after installation is complete.

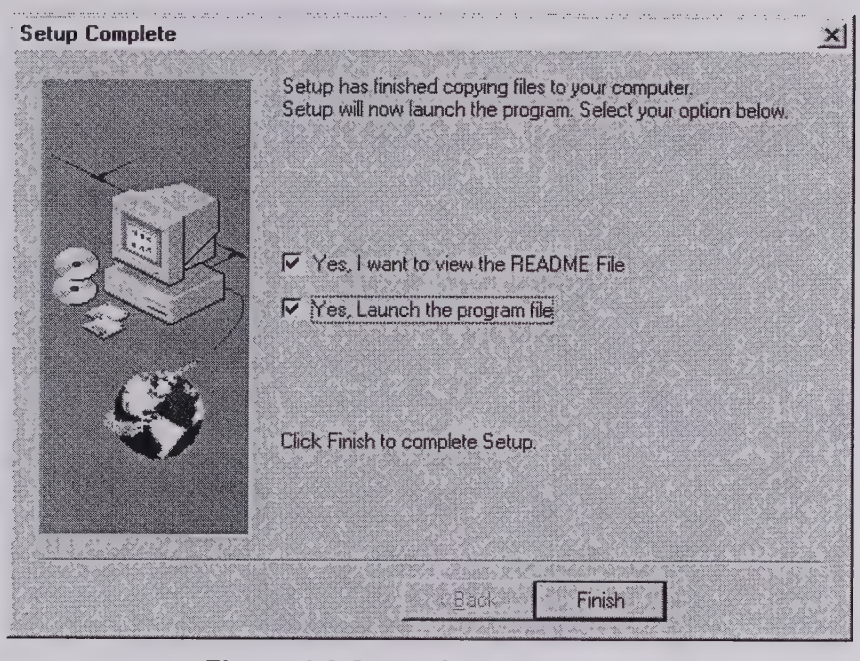
Setup Complete
Setup has finished copying files to your computer.
Setup will now launch the program. Select your option below.
Yes, I want to view the README File
Yes, Launch the program file
Click Finish to complete Setup.
Back
Finish

**Figure 4-8 Setup Complete dialog**

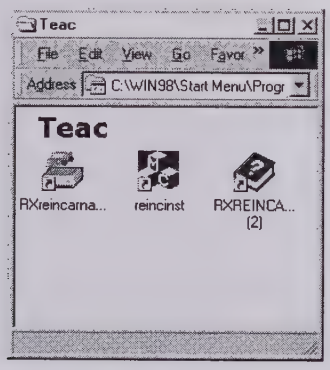


**Figure 4-9 QuikVu-RX/Windows Group Folder**

## 4.2 Files needed for QuikVu-RX/Windows

(1) Application software
RXREINCARNATION.EXE

(2) Virtual device driver for Windows 95
FROMVXD.VXD

(3) Kernel-mode driver for Windows NT
RXREINC.SYS

(4) DLLs
MSVCRT.DLL
MSVCIRT.DLL

**MFC42.DLL**

## 4.4 Installation for Windows NT

To install Windows NT kernel-mode driver requires copying the driver to file and appending it into the registry. We provide 'REINCINST.EXE' application for this procedure. (Fig.4-4-1 and 4--4-2) The followings are more information for your convenience in troubleshooting.

Registry information for 'rxreinc' is below.

\Registry\Machine\System\CurrentControlSet\Services\rxreinc
  Type = REG_DWORD 0x1
  Start = REG_DWORD 0x2
  Group = REG_SZ Extended Base
  ErrorControl = REG_DWORD 0x1
  Parameters
    IoIrq = REG_DWORD 0x5
    IoMemLength = REG_DWORD 0x8000
    IoMemMap = REG_DWORD 0xd8000
    IoPortAddress = REG_DWORD 0x260
    IoPortCount = REG_DWORD 0x10

You can see the above information in 'REGEDIT32.EXE' at 'HKEY_LOCAL_MACHINE' - SYSTEM - CurrentControlSet - Services after proper installation.
If you like, you can register without 'KRNLINST.EXE' but 'REGEDIT32.EXE' with above informations.

The driver operation can be checked under 'Devices' in 'Control Panel'.
However it is also available to command in DOS prompt by;

'net start rxreinc' to start the driver,
'net stop rxreinc' to stop the driver.

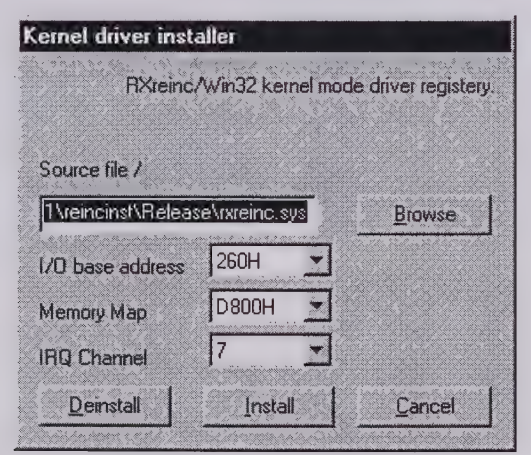


**Figure 4-10 Kernel-mode driver installer**

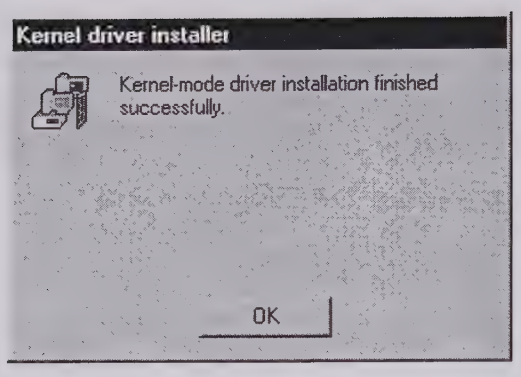


**Figure 4-11 Kernel-mode driver installed**

## 4.5 QuikVu ISA Interface Board

### 4.5.1 The DIP switch settings

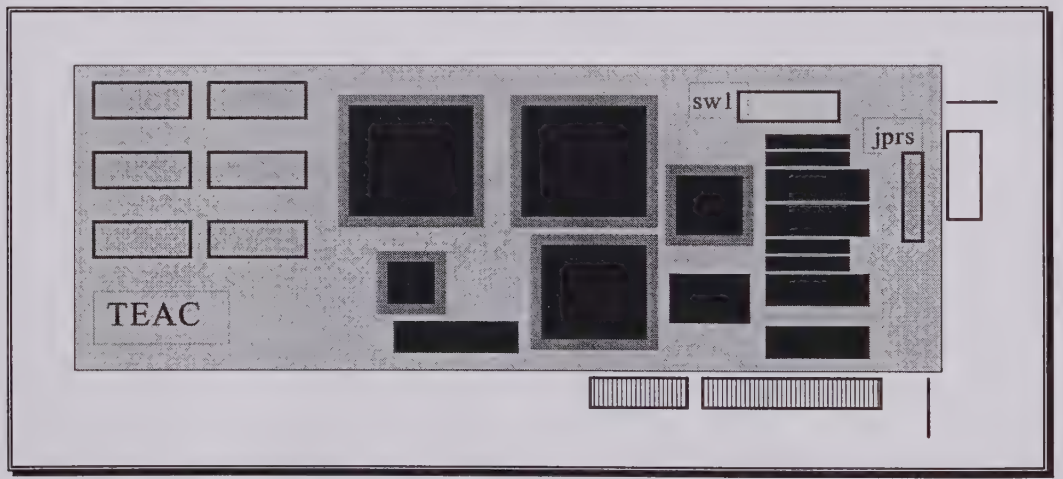


**Figure 4-12 QuikVu-RX Interface Board**

The board has been factory configured to operate upon installation in most computer systems.

The default jumper or switch settings for the ***QuikVu*** interface board are listed below. Your computer system may contain accessory boards such as bus mouse, data acquisition boards that are already using the same "address" as the interface board. If this is the case, you will need to modify the ***QuikVu*** address configuration.

| JUMPER/SWITCH | DESCRIPTION | SETTING |
|---|---|---|
| jp1 - jp2 | PARALLEL CABLE | no jumper |
| jp3 - jp4 | PARALLEL CABLE | no jumper |
| jp5 - jp6 | TZ711 CABLE | jumper (default) |
| jp7 - jp8 | TZ711 CABLE | jumper (default) |
| sw1 | I/O base address, memory address, IRQ setting | 260 hex, D800 hex, IRQ7 (default) |

**Figure 4-13 Dip switch setting**

| I/O base address | DIP switch position | | |
|---|---|---|---|
| | 2 | 3 | 4 |
| 200h | ON | ON | ON |
| 210h | ON | ON | OFF |
| 220h | ON | OFF | ON |
| 230h | ON | OFF | OFF |
| 240h | OFF | ON | ON |
| 250h | OFF | ON | OFF |
| 260h | OFF | OFF | ON |
| 270h | OFF | OFF | OFF |

**Figure 4-14 I/O base address DIP switch setting**

If there is any board in your computer that uses 260 hex (default) for the base address, change the dip switch position on the ***QuikVu*** board. Seven alternate settings for the switch positions are shown in the table. The board will work with any of these.(Default setting is 260h.)

| Dual Port Memory address | DIP switch position |
|---|---|
| | 1 |
| D800h | OFF |
| D000h | ON |

**Figure 4-15 Memory Map address DIP switch setting**

(Default setting is D800h)

| IRQ setting | DIP switch position | |
|---|---|---|
| | 7 | 8 |
| IRQ7 | OFF | ON |
| IRQ5 | ON | OFF |

**Figure 4-16 IRQ channel DIP switch setting**

(Default setting is IRQ5)

(DIP switch positions 5 and 6 are reserved.)

### 4.5.2 Installing Board

Before opening the computer cover, be sure to take all necessary precautions for working on high-voltage equipment. To protect yourself and prevent damage to delicate system components:

- Turn off your PC and all peripherals and unplug all power cords.
- Disconnect all cables.
- Remove any jewelry from your hands or wrists.
- Use only insulated or non conductive tools.

To install the QuikVu board:

- Remove the cover of your PC to access the I/O slots of the PC.

- Select any available 16-bit accessory slot (ISA bus) and remove the accessory slot cover which faces the back of the machine by removing the single screw inside the plate and lifting the plate up.

- To discharge static electricity, hold the QuikVu board in its bag in one hand and touch any metal portion of the computer chassis with your other hand.

- Remove the board from the bag, handling it by the edges and without touching the edge connectors or components.

- Holding the board by the top edge, align it over the accessory slot so the edge connector is headed into the slot. Be sure the accessory cover plate slides into the slot on the back of the computer.

- Once the board is firmly inserted into the slot, screw it into the bracket using the screw removed from the slot cover. This grounds the board and prevents it from dislodging from the slot.

- Replace the computer cover and all cover screws. Reconnect all peripherals cables and power cords.

- Connect one end of the accessory cable (25-pin D-sub connector) to the QuikVu port on the back panel of computer; the other end should fit into the I/F port on the back panel of the recorder.

# 5. Analysis Logic

## 5.1 Integrals

The calculation logic of Derivatives is quoted from Simpson's rule.

$$\int f(x) = h\left[\frac{1}{3}f1 + \frac{4}{3}f2 + \frac{1}{3}f3\right] + O(h^5 f^{(4)})\sum$$

## 5.2 1st Derivatives

The calculation logic of 1st Derivatives is from the definition.

$$f'(x) \approx \frac{f(x+h) - f(x)}{h} \quad \text{and} \quad f'(x) \approx \frac{f(x+h) - f(x-h)}{2h}$$

## 5.3 2nd Derivatives

The logic of 2nd Derivatives is from the calculation of two Taylor series.

$$f(x+h) = f(x) + hf'(x) + \frac{1}{2}h^2 f''(x) + \frac{1}{6}h^3 f'''(x) + .... \quad (1)$$

$$f(x+h) + f(x-h) = 2f(x) + h^2 f''(x) + ... \quad (2)$$

Then

$$f''(x) \approx \frac{1}{h^2}\{f(x+h) + f(x-h) - 2f(x)\}$$

## 5.4 Filtration

The logic to get filtration coefficients is using Fourier Series. The formula to get each filter coefficients are the followings.

### 5.4.1 Low Pass Filter

$$c = \frac{\sin(\tau \times lpf)}{\tau \times \pi}, for(\tau \quad 0) \qquad c = \frac{lpf}{\tau}, for(\tau = 0)$$

### 5.4.2 High Pass Filter

$$c = \frac{\sin(\tau \times \pi) - \sin(\tau \times hpf)}{\tau \times \pi}, for(\tau \neq 0) \qquad c = \frac{\pi - lpf}{\pi}, for(\tau = 0)$$

### 5.4.3 Band Pass Filter

$$c = \frac{\sin(\tau \times lpf) - \sin(\tau \times hpf)}{\tau \times \pi}, for(\tau \neq 0) \qquad c = \frac{lpf - hpf}{\pi}, for(\tau = 0)$$

### 5.4.4 Band Reject Filter

$$c = \frac{\sin(\tau \times \pi) - \sin(\tau \times hpf) + \sin(\tau \times lpf)}{\tau \times \pi}, for(\tau \neq 0) \qquad c = \frac{\pi - hpf + lpf}{\pi}, for(\tau = 0)$$

## 5.5 Auto/Cross correlation

Cross correlation between g and h is defined by

$$R_{xy} = \lim_{T \to \infty} \frac{1}{T} \int_0^T x(t) y(t + \tau) dt$$

Then this discrete formula with normalization is expressed by

$$R_{xyj} = \sum_{i=N} x_i y_{i+j} \Big/ R_{xy0} \qquad R_{xy0} = \sum_{i=N} x_i y_i$$

## 5.6 Phase correction

Phase correction filter is from Polynominal Interpolation by Lagrange's classical formula.

$$P(x)=\frac{(x-x_2)(x-x_3)...(x-x_N)}{(x_1-x_2)(x_1-x_3)...(x_1-x_N)}y_1+\frac{(x-x_1)(x-x_3)...(x-x_N)}{(x_2-x_1)(x_2-x_3)...(x_2-x_N)}y_2....$$
$$\frac{(x-x_1)(x-x_2)...(x-x_{N-1})}{(x_N-x_1)(x_N-x_2)...(x_N-x_{N-1})}y_N$$

# 6. Data file format

## 6.1 QuikVu format

The following is new QuikVu header format.

```
typedef struct{
      char  ascii[40];        // memo
      char  eof;
      char  ver;
      // recorded time on the tape
      char  year;             // year of the date
      char  month;                  // month of the date
      char  day;              // day of the date
      char  hour;             // hour of the time
      char  minute;                 // minute of the time
      char  second;                 // second of the time
      // recorded ID and counter
      unsigned short    acounter;// A counter at recording started
      char  id;                     // ID at recording started
      unsigned short    pcounter;// P counter at recording started
      // recorded data informations
      char  recCh[32];        // downloaded channel
      char  mpx;              // original mpx at recording time
      char  speed;                  // tape speed (0:x1, 1:x2)
      unsigned short    skip; // skip number to create data file
      unsigned long     dtsize;     // data size in word
      float sampF;                  // sampling frequency of the filed data
      // input range
      char  iRange[32]; // input range for each
      float calA[32];   // A factor of y = Ax + b
      float calB[32];   // B factor
      // data file attribution
      char  byte_swap;        // flag for byte-swap
      char  mask_low2;        // flag for mask lower 2-bits
      char  phase_corr;       // flag for phase correction
      char  dec_filter;       // flag for decimation filter
      // dummy
      char  dmy[123];         // dummy
}NewQVHeader;
```

**Figure 6-17 New QuikVu Data Format**